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U. S. DEPARTMENT OF AGRICULTURE,

DIVISION OF STATISTICS—BULLETIN NO. 25.

JOHN HYDE, Statistician.

MILK TRANSPORTATION:

FREIGHT RATES TO THE LARGEST FIFTEEN CITIES IN THE UNITED STATES.

BY

EDWARD G. WARD, Jr.,

Expert in Transportation Statistics.

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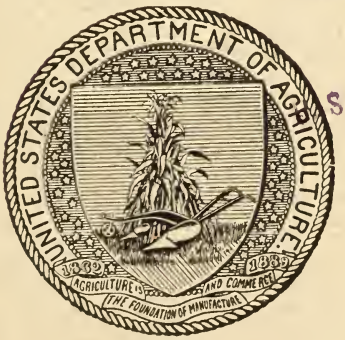

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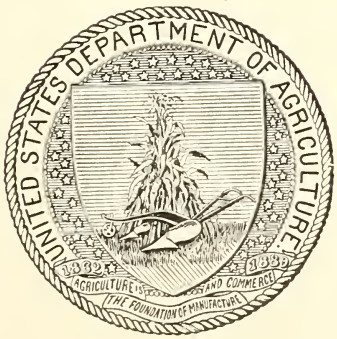

WASHINGTON:
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1903.

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Office of the Statistician.
Washington, D. C., December 27, 1902.

Sir: I have the honor to transmit herewith a report on the transportation of milk to the largest fifteen cities of the United States, prepared by Mr. Edward G. Ward, jr., expert in transportation statistics, and to recommend its publication as Bulletin No. 25, Division of Statistics.

This report not only deals with the subject of transportation charges so far as relates to milk, but also contains descriptions of the different methods employed in the carriage of milk for long and short distances.

Some general information regarding the milk supply of each city is also embraced in the report, such information including the territory from which the milk is derived and the average supply per day.

Respectfully,

John Hyde, *Statistician.*

Hon. James Wilson,
Secretary of Agriculture.

CONTENTS.

	Page
Sources of information	9
General remarks	9
Total supply and distance carried	9
Methods employed in the carriage of milk	10
TABLE 1.—Method of transporting to largest cities	11
Milk supply per capita	11
Use of milk in commercial industries	11
TABLE 2.—Milk supply of largest fifteen cities of United States	12
Transportation charges	12
Lack of uniformity in milk and cream rates	12
Transportation of milk to New York City	13
Daily supply	13
Equipment of railroads for milk traffic	14
Freight rates	14
New York Central and Hudson River Railroad	15
TABLE 3.—Rates on milk and cream from the State of New York	16
West Shore Railroad	16
TABLE 4.—Rates on milk and cream from New Jersey and New York	17
New York, New Haven and Hartford Railroad	17
TABLE 5.—Rates on milk and cream from Connecticut and Massachusetts	18
Erie Railroad	18
TABLE 6.—Rates on milk, cream, and condensed milk from New Jersey, New York, and Pennsylvania	19
Lehigh Valley Railroad	19
TABLE 7.—Rates on milk and cream from New Jersey, New York, and Pennsylvania	20
New York, Ontario and Western Railway	20
TABLE 8.—Rates on milk and cream from the State of New York	21
Shipments of milk and cream by steamer to New York City	21
TABLE 9.—Number of gallons of milk and cream supplied New York City 1885–1902	22
Milk transportation to Chicago	22
Large increase	22
Use for oleomargarine	23
Milk prices	23
Railroad service	23
Chicago and Great Western Railway	24
TABLE 10.—Rates on milk and cream from Illinois	24

Milk transportation to Chicago—Continued. Page.
Baltimore and Ohio Railroad 24
TABLE 11.—Rates on milk and cream from Indiana 25
Chicago, Rock Island and Pacific Railroad 25
TABLE 12.—Rates on milk and cream from Illinois 25
Wabash Railroad 25
TABLE 13.—Rates on milk and cream from Illinois 26
Wisconsin Central Railroad 26
TABLE 14.—Rates on milk and cream from Illinois and Wisconsin 26
Chicago and Erie Railroad 27
TABLE 15.—Rates on milk and cream from Indiana 27
Chicago, Burlington and Quincy Railroad 27
TABLE 16.—Rates on milk and cream from Illinois 28
Atchison, Topeka and Santa Fe Railway 28
TABLE 17.—Rates on milk and cream from Illinois 29
Chicago, Milwaukee and St. Paul Railway 29
TABLE 18.—Rates on milk and cream from Illinois and Wisconsin 29
Grand Trunk Railway 30
TABLE 19.—Rates on milk and cream from Illinois and Indiana 30
Illinois Central Railroad 30
TABLE 20.—Rates on milk from Illinois 30
Freight rates on milk to Philadelphia 31
Philadelphia and Reading Railroad 31
TABLE 21.—Rates on milk and cream from Pennsylvania and New Jersey 32
Pennsylvania Railroad 32
TABLE 22.—Rates on milk and cream from Pennsylvania and New Jersey 33
Baltimore and Ohio Railroad 33
TABLE 23.—Rates on milk and cream from Pennsylvania, Delaware, and Maryland 34
TABLE 24.—Rates on milk and cream from Delaware and Pennsylvania 34
Milk transportation to St. Louis 34
St. Louis, Kansas City and Colorado Railroad 35
TABLE 25.—Rates on milk and cream from Missouri 35
St. Louis and San Francisco Railroad 35
TABLE 26.—Rates on milk and cream from Missouri 36
Hannibal and St. Joseph Railroad 36
TABLE 27.—Rates on milk and cream from Missouri and Illinois 36
Wabash Railroad 36
TABLE 28.—Rates on milk from Illinois 36
Transportation of milk to Boston 37
Growth of supply and manner of consumption 37
TABLE 29.—Milk carried to Boston by railroads 37
Business arrangements 37
How the price is determined 38
The collection of milk for Baltimore 39
Western Maryland Railroad 39
TABLE 30.—Rates on milk and cream from Maryland 40
Maryland and Pennsylvania Railroad 40
TABLE 31.—Rates on milk from Maryland and Pennsylvania 40
Baltimore and Ohio Railroad 40
TABLE 32.—Rates on milk and cream from Maryland 41

Page.
Shipments of milk to Cleveland 41
Particulars of transportation 41
Erie Railroad 42
TABLE 33.—Rates on milk and cream from Ohio 42
New York, Chicago and St. Louis Railroad 42
TABLE 34.—Rates on milk from Ohio 43
Lake Shore and Michigan Southern Railroad 43
TABLE 35.—Rates on milk from Ohio 43
Cleveland, Cincinnati, Chicago and St. Louis Railway 43
TABLE 36.—Rates on milk and cream from Ohio 43
Cleveland Terminal and Valley Railroad 44
TABLE 37.—Rates on milk from Ohio 44
Wheeling and Lake Erie Railroad 44
TABLE 38.—Rates on milk from Ohio 44
Cleveland, Lorain and Wheeling Railway 45
TABLE 39.—Rates on milk from Ohio 45
Transportation by electric lines 45
Transportation of milk to Buffalo 46
Buffalo, Rochester and Pittsburg Railway 47
TABLE 40.—Rates on milk and cream from New York 47
Pennsylvania Railroad 47
TABLE 41.—Rates on milk and cream from New York 48
Erie Railroad 48
TABLE 42.—Rates on milk and cream from New York 48
Delaware, Lackawanna and Western Railroad 49
TABLE 43.—Rates on milk and cream from New York 49
New York Central and Hudson River Railroad 49
TABLE 44.—Rates on milk and cream from New York 50
Shipments of milk to San Francisco 50
Atchison, Topeka and Santa Fe Railway 50
TABLE 45.—Rates on milk and cream from California 51
Southern Pacific Company 51
TABLE 46.—Rates on milk from California 52
California Transportation Company 52
Milk transportation to Cincinnati 52
Cincinnati, New Orleans and Texas Pacific Railway 53
TABLE 47.—Rates on milk and cream from Kentucky 53
Cleveland, Cincinnati, Chicago and St. Louis Railway 53
TABLE 48.—Rates on milk and cream from Ohio and Indiana 53
Freight rates on milk to Pittsburg 54
Lake Shore and Michigan Southern Railway 54
Transportation of milk to New Orleans 54
Illinois Central Railroad 54
TABLE 49.—Rates on milk from Louisiana and Mississippi 55
Milk shipments to Detroit 55
Michigan Central Railroad 56
TABLE 50.—Rates on milk from Michigan 56
Grand Trunk Railway 56
TABLE 51.—Rates on milk from Michigan 56
Wabash Railroad 57
TABLE 52.—Rates on milk and cream from Michigan 57
Transportation of milk to Milwaukee 57
Chicago, Milwaukee and St. Paul Railway 57
TABLE 53.—Rates on milk and cream from Wisconsin 58

Page
Milk transportation to Washington 58
Baltimore and Ohio Railroad 59
TABLE 54.—Rates on milk and cream from Maryland 59
Southern Railway 59
TABLE 55.—Rates on milk from Virginia 60

MILK TRANSPORTATION: STATISTICS OF FREIGHT RATES FOR FIFTEEN CITIES.

SOURCES OF INFORMATION.

In collecting the data required to complete this investigation letters of inquiry were addressed to prominent boards of health and railroad officials in different cities throughout the country, and it was largely due to their generous cooperation that the information herein presented was procured. Space does not admit of individual acknowledgment of all information furnished, but the Department wishes to extend its thanks to all persons who directly or indirectly aided in the preparation of this bulletin.

GENERAL REMARKS.

TOTAL SUPPLY AND DISTANCE CARRIED.

About 850,000 gallons of milk[a] are required daily to supply the largest fifteen cities of the United States, and as milk is one of the most perishable of our food products it is necessary that it should be transported to the market in which it is to be distributed for consumption with the greatest possible expedition.

In the smaller cities and towns, where the great bulk of the milk is produced within easy wagon distance of the consumer, this is a comparatively simple matter; but when the supply of large cities with a transportation, in some cases, of several hundred miles is taken under consideration the problem becomes more difficult. How successfully the railroads have overcome all obstacles encountered in transporting milk for long distances can be best illustrated by stating that a large part of the New York City milk supply is carried over 200 miles, while some shipments are made from points as far distant as 350 miles. In order, however, to transport milk successfully for such long distances the most improved methods known to transportation must be employed. Refrigerator cars or milk cars especially constructed for the purpose are used, and the milk is kept at a low temperature by means of ice

[a] Includes cream.

during the entire time of its carriage The trains are run on virtually passenger schedule time, the actual running time often being as fast as 50 miles an hour.

In the cities of smaller size the milk required for consumption is naturally much less than that demanded by great cities like New York and Chicago. This obviates the necessity of hauling long distances, as enough milk to meet the wants of the inhabitants can generally be procured from comparatively nearby territory. The use of the refrigerator car, therefore, becomes unnecessary, and the baggage or express car takes its place. These cars are generally run in conjunction with local passenger trains, and milk is successfully carried in them without artificial refrigeration for distances varying from 5 to 100 miles.

METHODS EMPLOYED IN THE CARRIAGE OF MILK.

There are four methods by which milk collected for city consumption is transported: By steam railroads, by electric railroads, by steam vessels, and by wagons.

The major part of the milk supply of large cities is collected by steam railroads. However, this is not true in all cases, St. Louis being a notable exception. In that city the greater percentage of the milk consumed is produced within the city limits and distributed by means of wagons. This is due to purely local conditions. St. Louis is the home of great brewing industries, and the refuse of these breweries, in the form of spent grain, is sold at a low price to city dairymen, who use it as the chief article of food for their cows. By this method milk is produced much cheaper in the city than it can be in the neighboring country. The city of New Orleans also receives nearly its total supply from wagons making collections within the city limits and from suburban farms.

Electric railroads running into Cleveland and Detroit carry large quantities of milk to those cities. Collections are made at every crossroad or farmhouse where milk can be procured, and in this manner all the adjacent territory through which these lines operate is reached. The growing importance of the electric railroads as milk carriers can not well be overlooked. Philadelphia and Washington also each reports the use of one electric line in connection with the collection of their respective milk supplies.

New York receives a very small part of its milk supply from a steamboat which makes collections at Hudson River landings, while San Francisco receives considerable milk from steamboats navigating San Francisco Bay and tributary rivers.

Where milk is produced in cities or in territory so near a city as not to require railroad transportation, wagons are employed in its collection. This is the principal means by which the supply of small cities is procured, and is very often the only means.

The following table illustrates the relative importance of the different methods by which milk is transported to the largest fifteen cities of the United States:

TABLE 1.—*Methods of transporting milk to fifteen largest cities of United States.*

Cities.	Carried by steam railroads.	Carried by wagons.[a]
	Per cent.	*Per cent.*
New York, N. Y	[b]88	12
Chicago, Ill	97	3
Philadelphia, Pa	[c]90	10
St. Louis, Mo	43	57
Boston, Mass	80	20
Baltimore, Md	78	22
Cleveland, Ohio	[c]84	16
Buffalo, N. Y	85	15
San Francisco, Cal	[b]55	45
Cincinnati, Ohio	25	75
Pittsburg, Pa	90	10
New Orleans, La	14	86
Detroit, Mich	[c]50	50
Milwaukee, Wis	25	75
Washington, D. C	[c]57	43

[a] Includes all milk produced in urban and suburban territory which is collected by wagons.
[b] Includes transportation by steamer.
[c] Includes transportation by electric railroads.

MILK SUPPLY PER CAPITA.

The average daily supply of milk per capita varies greatly in the different large cities, but considered generally the Northern cities show a much larger relative supply than do the Southern ones. It is probable that the comparatively low supply of such cities as Baltimore, Washington, and New Orleans is principally due to the large negro element in their population, and also to the comparatively small amount of milk used for manufacturing purposes.

USE OF MILK IN COMMERCIAL INDUSTRIES.

While the estimated average daily supply per capita in 1900 as presented in Table 2 does in some cases undoubtedly represent closely the individual milk consumption, it should be considered in making comparisons between cities that in some cases milk is not only used for consumption in its natural state but goes largely into the manufacture of condensed milk, ice cream, butter, cheese, and oleomargarine. These industries vary greatly in size and importance in the different cities, and necessarily exert a marked influence upon milk consumption. For illustration, Boston's milk supply in 1900 amounted to over 90,000,000 quarts, but so far as consumption was concerned nearly 14,000,000 quarts were used almost entirely in the manufacture of butter. At Chicago oleomargarine industries consume annually large quantities of milk, while industries in other cities draw on their supplies for the manufacture of food products in which milk forms a part.

TABLE 2.—*Milk supply of the largest fifteen cities of the United States.*[a]

Cities.	Population in 1900.	Estimated average daily supply in 1900.	Estimated average daily supply per capita in 1900.
		Gallons.	*Pints.*
New York, N. Y	3,437,202	[b]268,813	0.6 6
Chicago, Ill	1,698,575	161,000	.758
Philadelphia, Pa	1,293,697	75,342	.466
St. Louis, Mo	575,238	29,375	.409
Boston, Mass	560,892	82,192	1.172
Baltimore, Md	508,957	25,000	.393
Cleveland, Ohio	381,768	23,000	.482
Buffalo, N. Y	352,387	31,000	.704
San Francisco, Cal	342,782	27,000	.63
Cincinnati Ohio	325,902	25,000	.614
Pittsburg, Pa	321,616	30,000	.746
New Orleans, La	287,104	9,875	.275
Detroit, Mich	285,704	25,000	.7
Milwaukee, Wis	285,315	24,650	.691
Washington, D. C	278,718	12,000	.344

[a] In most cases the milk supply includes cream and skimmed milk.
[b] Estimate of Mr. J. C. Anderson, General Freight and Passenger Agent of the New York, Ontario and Western Railway.

TRANSPORTATION CHARGES.

Charges by the railroads for transporting milk and cream will be found in the following tables, and, although all freight rates are subject to fluctuation, it is believed that those presented represent with a fair degree of accuracy the price paid by the farmer for having his milk carried to market during the year 1902. It has been impossible to obtain rates from every railroad which transports milk and cream to the cities under discussion, but sufficient material has been obtained to permit an intelligent study of the subject.

In nearly all instances the charges for transportation are paid by the farmer direct to the railroad. In Boston, however, a different policy has been adopted. There milk dealers, known as wholesale contractors, rent the cars and take the milk at the station from which it is transported. The price paid the farmer is the Boston wholesale price less the freight charge fixed by the contractor.

LACK OF UNIFORMITY IN MILK AND CREAM RATES.

Generally speaking, the charges for transporting milk to the different cities herein presented lack uniformity. This is especially true regarding the larger cities, where the different policies adopted by the various railroads are often the cause of a wide difference between the prices asked for carrying milk like distances to the same city. In fact it has been noted in some instances that charges on different divisions of the same railroad vary to such a degree as to cause, in a number of cases, a higher charge to be asked for a short haul than for a long one.

In the smaller cities this lack of uniformity does not exist to such a marked degree, and in some instances practically the same milk rate

is charged by all railroads entering a city. The difference in the prices asked for transporting cream is remarkable. In some cases it is carried at the same rate as milk, while in others it varies anywhere from 5 or 10 cents more per can up to double the rate asked for milk.

TRANSPORTATION OF MILK TO NEW YORK CITY.

DAILY SUPPLY.

The milk[a] and cream supply of New York City has increased from about 300,000,000 quarts in 1890 to nearly 400,000,000 quarts in 1900. The average supply per capita for the year 1900 was slightly over 114 quarts.[b]

In November, 1901, it was estimated that the daily receipts of milk and cream at New York City amounted to 1,230,000 quarts approximately.[c] Of this vast quantity from 85 to 90 per cent was transported by the railroads, while the balance was brought in by wagons from suburban territory or supplied by herds within the city limits. These herds contain an aggregate of about 23,200 cows and are regularly inspected for tuberculosis by officers of the local board of health. The proprietors of city dairies are required to observe certain sanitary regulations pertaining to the cleanliness of the stables, cows, and milk.

The States of New York, New Jersey, Pennsylvania, Connecticut, and Massachusetts supply the milk which is brought in by the railroads, some of it coming from a distance of over 350 miles. A great quantity of milk is forwarded from the northern and northeastern sections of New York State, and it is interesting to note that in some cases shipments destined for New York and Buffalo, respectively, originate within 12 miles of each other. Steamers touching at points on the Hudson River carry about 40,000 quarts of milk and cream daily to New York City.

In a few instances the supply of milk from districts whose shipments were large but a few years ago has greatly diminished or entirely disappeared. This is particularly true of what was once the dairy country of Long Island. From this section shipments over the railroads have steadily decreased from 6,500,000 quarts in 1885 to practically nothing in 1901. This undoubtedly is largely due to the intensive cultivation of garden truck, which, having a ready sale in a great market near by, has developed an industry which has become far more profitable than dairying. Another, but less important, cause for the practical disappearance of this supply is the rapid absorption of

[a] Includes condensed milk.

[b] Computed from figures supplied by J. C. Anderson, General Freight and Passenger Agent of the New York, Ontario and Western Railway.

[c] Estimate of board of health, New York City.

farms adjacent to New York City into suburban villages, this movement having taken place to a remarkable extent during the past five years.

EQUIPMENT OF RAILROADS FOR MILK TRAFFIC.

In the transportation of milk, baggage cars, refrigerator cars, and cars especially constructed for the purpose are employed. The railroads adopt the style of cars best suited to their individual requirements. In the case of light shipments and short hauls baggage cars appear to meet every requirement, and are generally moved in conjunction with local passenger trains. In the case of long hauls, however, refrigerator or special milk cars are used. These cars are plentifully supplied with ice during the warm summer months, and in extremely cold weather are often steam heated to prevent the milk from freezing. Cleaning generally takes place after each run, the cars being either swept or washed by means of a hose. One railroad reports the use of sal soda for cleaning purposes. Trains making long hauls are usually composed entirely of refrigerator or special milk cars, and are operated on about passenger schedule time, the actual running time being as fast as 50 miles an hour. The capacity of a large milk car is 325 40-quart cans.

Nearly all railroads which handle a large milk traffic have covered receiving stations along their lines. The following description of a modern receiving station was furnished by a prominent railroad official in giving an account of those in use along the line of his railroad:[a]

> Shipping stations are equipped with large cooling vats, in which cans of milk are placed immediately when delivered by the farmers. These vats are filled with water and ice, the milk is stirred and cooled down to 40° F. within forty minutes from the time it is received, and kept in ice water until the train arrives, when it is loaded direct from the vats into a refrigerator car. Shipping stations are also equipped with wash boxes, into which a jet of steam is forced, which warms the water to boiling point. The cans are washed thoroughly in hot water, rinsed in cold water, and then steamed out by being turned upside down over a jet of steam, then placed on racks out-of-doors to air out. Sal soda is used principally in washing cans. All stations are supplied with an abundance of pure water, which is used freely.

FREIGHT RATES.

Freight rates on milk and cream shipped to New York City lack uniformity. Although many of the railroads have adopted the zone system, as requested by the Interstate Commerce Commission, others are using their own systems, causing noticeable discrepancies in freight charges for equal distances as between different railroads or divisions of railroads.

[a] Letter from Asa L. Foster, General Freight Agent, Lehigh Valley Railroad.

One railroad transporting milk to New York from a distance of 155 miles charges a uniform rate of 25 cents per can of 40 quarts on all its milk shipments, whether they originate at a point near the city or at a point 155 miles distant, and no differential is established between the milk and cream rates, the same charge being always made for carrying both commodities.

Another railroad, composed of a number of divisions, charges so much per can from each division, with the result that farmers living at a station located 109 miles from New York are paying 25 cents per can to ship their milk to the city, while others living at a station 52 miles distant, but on another division, have to pay 30 cents a can. The rate charged on the latter division is higher because the average haul is longer, but this does not prevent, at least in a few instances, a farmer who lives at a long distance securing a lower rate than one who lives near.

The remainder of the railroads seem to have generally adopted the zone system, but no railroads running into New York charge uniform rates on milk and cream with the single exception of the one noted above. One road asks 5 cents more per can of 40 quarts on cream, while the others appear to charge as much as 18 cents more.

NEW YORK CENTRAL AND HUDSON RIVER RAILROAD.

The rates found in Table 3 are those charged by the New York Central and Hudson River Railroad for transporting milk and cream from stations along its various divisions to New York City. The points named are used simply to show from about what distances these rates apply.

It appears from a study of this table that in some instances rates are differentiated in favor of milk stations nearest New York. This is occasioned by Pawling, Coleman, and Hillsdale being on the Harlem division of the railroad, over which milk rates to New York are uniformly 25 cents per 40 quarts, and Cold Spring, New Hamburg, and Staatsburg being on the Hudson division and subjected to a uniform charge of 30 cents per 40 quarts to New York. The average haul over the Harlem division is about 50 miles, as compared with an average haul of 75 miles over the Hudson division.

Milk collections are made in northern New York fully 350 miles from New York City, from the Mohawk and Hudson valleys, and from territory both east and west of the Hudson River.

Cars specially constructed for the transportation of milk are generally used, although ordinary refrigerator cars are employed to some extent. At regular intervals of time the cars are thoroughly cleaned.

The operating time schedule for milk trains varies from 20 to 25 miles an hour; actual running time is, of course, much faster than this.

TABLE 3.—*Transportation rates on milk and cream from State of New York to New York City.*

[New York Central and Hudson River Railroad.]

Stations.	Miles to New York City.	Fluid milk (in cents per can, 40 quarts or less).	Cream or condensed milk (in cents per can, 40 quarts or less).	In bottles (cents per case).									
				Milk.					Cream.				
				12 quarts.	15 quarts.	20 quarts.	40 quarts.	60 quarts.	12 quarts.	15 quarts.	20 quarts.	40 quarts.	60 quarts.
Putnam division:													
Briar Cliff Manor	26	25	30	7½	9½	12½	25	37½	7½	9½	12½	30	37½
Amawalk	38												
Baldwin Place	42												
Hudson division:													
Cold Spring	52	30	40	9	12	15	....	....	....	....	....	....	....
New Hamburg	65												
Staatsburg	83												
Harlem division:													
Pawling	64	25	35	9	12	15	....	....	....	....	....	....	....
Coleman	89												
Hillsdale	109												
Delaware and Hudson division:													
Cobleskill	188	32	....	....	....	....	....	....	....	....	....	....	....
Hyndsville	193												
Wells Bridge	238												
Mohawk division:													
Little Falls	216	32	....	....	....	....	....	....	....	....	....	....	....
Herkimer	224												
Schuyler Junction	234												
Rome, Watertown, and Ogdensburg division:													
Castorland	303	32	....	....	....	....	....	....	....	....	....	....	....
Deer River	307												
Carthage	311												

WEST SHORE RAILROAD.

Rates charged by the West Shore Railroad for transporting milk and cream over its line to Weehawken, N. J., are found in Table 4. The names of enough milk stations are given to show from about what distances these rates apply.

Milk trains are run on approximately passenger-train schedule time, the milk from the extreme points of origin moving forward in the early morning, together with milk from intermediate points later in the morning, and all reaching Weehawken via Kingston, or New York City via Schenectady, the same evening.

All milk is handled in cars which are especially constructed for the traffic, being somewhat similar to an ordinary baggage car and equipped for passenger-train movement. Ice is put inside the cars and packed around and on the cans or cases. The cars are cleaned when returned to the creameries for reloading, and it is understood that all cans, jars, etc., are thoroughly cleaned and sterilized at the creameries before refilling.

TABLE 4.—*Transportation rates on milk and cream from New Jersey and New York to Weehawken, N. J.*[a]

[West Shore Railroad.]

Stations.	Miles to New York City.	Milk.		Cream.	
		40-quart cans (cents per can).	Quart bottles (cents per 40 quarts).	40-quart cans (cents per can).	Quart bottles (cents per 40 quarts).
New Durham, N. J	3				
Teaneck, N. J	10				
Tappan, N. Y	20	23	31	41	49
Congers, N. Y	29				
Jonespoint, N. Y	40				
West Point, N. Y	48				
Marlboro, N. Y	66	26	34	44	52
Westpark, N. Y	79				
Kingston, N. Y	89				
Catskill, N. Y	111				
Ravena, N. Y	129				
Albany, N. Y	142	29	37	47	55
Rotterdam Junction, N. Y	160				
Fultonville, N. Y	179				
Canajoharie, N. Y	191				
Mohawk, N. Y	217				
Utica, N. Y	233				
Oneida Castle, N. Y	253				
Chittenango, N. Y	265				
Amboy, N. Y	286	32	40	50	58
Weedsport, N. Y	300				
Clyde, N. Y	317				
Fairport, N. Y	350				
Churchville, N. Y	375				
Elba, N. Y	390				
Bowmansville, N. Y	418				

[a] Weehawken, N. J., is on the Hudson River, directly opposite New York City, and virtually all milk received there from the railroads is for distribution in the latter city.

NEW YORK, NEW HAVEN AND HARTFORD RAILROAD.

The rates found in Table 5 are those charged by the New York, New Haven and Hartford Railroad Company for transporting milk and cream to New York City. Shipments of milk to New York over the New York, New Haven and Hartford Railroad are made from three States, namely, New York, Connecticut, and Massachusetts.

The stations given represent only a small portion of those from which milk is collected, and are inserted simply to indicate from about what distances the rates apply. It will be seen at a glance that the same charge is made for all distances, and that the milk and cream rates are identical. This latter feature appears to be a radical departure from the policy adopted by the other railroads carrying milk into New York City, inasmuch as rates on cream are generally much higher than milk rates, in some instances being almost double. The uniformity of these rates is still further emphasized when it is explained that they apply not only to shipments to New York City but also to shipments to a number of other cities and towns located in southeastern New York and southwestern Connecticut, such as Mount Vernon, New

Rochelle, and Port Chester, N. Y., and Stamford, Bridgeport, and New Haven, Conn.

A milk train leaves Pittsfield, Mass., at 12.25 in the afternoon and arrives at Harlem River, New York City, at 10.05 that evening, making a run of 155 miles in nine hours and forty minutes, or at the rate of about 16 miles an hour, including all stops en route. The cars are of the baggage-car type, being provided with compartments or racks to hold ice. They are thoroughly cleaned with water by means of a hose, and in warm weather are abundantly iced before shipments are made.

TABLE 5.—*Transportation rates on milk and cream from Connecticut and Massachusetts to New York City.*

[New York, New Haven and Hartford Railroad.]

Stations.	Miles to New York City.	Milk and cream.			
		40-quart cans (cents per can).	30-quart cans (cents per can).	20-quart cans (cents per can).	Quart bottles (cents per 40 quarts).
South Norwalk, Conn	42	25	23½	15	30
Branchville, Conn	54				
Bethel, Conn	62				
Brookfield Junction, Conn	71				
Brookfield, Conn	74				
New Milford, Conn	90				
Kent, Conn	93				
Cornwall Bridge, Conn	102				
Canaan, Conn	121				
Vandeusenville, Mass	132				
Lenox, Mass	148				
Pittsfield, Mass	155				

ERIE RAILROAD.

The rates in Table 6 apply from stations along the main line and branches of the Erie Railroad. A few stations and their distances from New York are given so as to show from about what distances these rates apply.

Milk collections are made in the States of New York, Pennsylvania, and New Jersey, and cover a distance of 285 miles on the main line and 124 miles on the various branches. A milk train composed of cars built and used exclusively for milk traffic leaves Hornellsville, N. Y., at 6 o'clock in the morning and arrives in Jersey City at 10.40 p. m., covering a distance of 332 miles in sixteen hours and forty minutes.

TABLE 6.—*Transportation rates on milk, cream, and condensed milk from stations in New Jersey, New York, and Pennsylvania to Jersey City, N. J.*[a]

[Erie Railroad.]

Stations.	Miles to New York City.	Milk.			Cream and condensed milk.		
		40-quart cans (cents per can).	Quart bottles (cents per 40 quarts).	Pint bottles (cents per 40 quarts).	40-quart cans (cents per can).	Quart bottles (cents per 40 quarts).	Pint bottles (cents per 40 quarts).
Garfield, N. J	12	23	31	35	41	49	53
Waldwick, N. J	28						
Tuxedo, N. Y	38						
Southfield, N. Y	42	26	34	38	44	52	56
Pine Island, N. Y	72						
Pond Eddy, N. Y	99						
Rowland, Pa	115	29	37	41	47	55	59
Honesdale, Pa	136						
Lanesboro, Pa	194						
West Carbondale, Pa	230						
Elmira, N. Y	274	32	40	44	50	58	62
Hornellsville, N. Y	332						
Hoytville, Pa	335						

[a] Jersey City, N. J., is on the Hudson River directly opposite New York City, and substantially all milk received there is for distribution in the latter city.

LEHIGH VALLEY RAILROAD.

The rates found in Table 7 are those asked by the Lehigh Valley Railroad for transporting milk over its line to New York City. A few stations have been inserted so as to give an idea from about what distances milk shipments are made.

The territory covered in making milk collections lies in the counties of Chemung, Tioga, Broome, Schuyler, Tompkins, Ontario, Seneca, Cortland, and Madison in New York State; Bradford, Wyoming, and Susquehanna in Pennsylvania, and Hunterdon and Somerset in New Jersey. Milk trains leave the farthest point, Clockville, N. Y., at 8.04 a. m., and arrive at Jersey City terminal at 10.30 p. m., making the entire run of 387 miles in about fourteen and one-half hours, or at the rate of nearly 27 miles an hour, including all stops. This must be considered as remarkably fast time.

The cars used are of two sizes and are equivalent to refrigerators on wheels. The larger ones have a capacity of 325 40-quart cans and the smaller ones a capacity of 225 40-quart cans. They are built with an ice compartment at each end of the car, with ample ice capacity, so that the milk is delivered at Jersey City at a temperature of less than 50° F. The milk is loaded and unloaded through doors at the side of the car which are air-tight when closed. The cars also have end doors with vestibules, so that when the train crew have to pass through they can close the outside door of the car before opening the inside vestibule doors, thus preventing the cold air in the cars from escaping. Every day the cars are thoroughly scrubbed and rinsed, water and sal soda being used for cleaning purposes.

TABLE 7.—*Transportation rates on milk and cream from stations in New Jersey, New York, and Pennsylvania to Jersey City, N. J.*[a]

[Lehigh Valley Railroad.]

Stations.	Miles to New York.	Milk.			Cream.	
		40-quart cans (cents per can).	Quart bottles (cents per 12 quarts).	Quart bottles (cents per 40 quarts).	40-quart cans (cents per can).	Quart bottles (cents per 40 quarts).
South Somerville, N. J.	38	23	10	34	36	.....
Flemington, N. J.	53	25	10	34	.....	.....
Bloomsbury, N. J.	68	25	10	34	.....	.....
Vosburg, Pa.	214					
Meshoppen, Pa.	224					
Lockwood, N. Y.	288					
Van Etten, N. Y.	296					
West Danby, N. Y.	307	32	12	40	50	58
Farmer, N. Y.	324					
McLean, N. Y.	334					
Sheds Corners, N. Y.	367					
Clockville, N. Y.	387					

[a] Jersey City, N. J., is on the Hudson River directly opposite New York City, and substantially all milk received there is for distribution in the latter city.

NEW YORK, ONTARIO AND WESTERN RAILWAY.

The rates charged by the New York, Ontario and Western Railway for transporting milk and cream from points along its line to Weehawken, N. J., are shown in Table 8. A few stations have been inserted so as to give a general idea from about what distances these rates apply.

Milk collections are made in Orange, Ulster, Sullivan, Delaware, Chenango, Otsego, Madison, and Oneida counties, N. Y., and, in conjunction with other railroads, from territory in New York east of the Hudson River and from territory in Connecticut and Wayne County, Pa. The first milk train of the day to reach Weehawken arrives at 10.10 p. m., having left Sidney, N. Y., 201 miles distant, at 10.35 the same morning. The second train arrives forty minutes later, coming from Rome, N. Y., 268 miles away, and intermediate stations, having started on its trip at 9 o'clock in the morning.

These two trains cover their respective distances at an average speed of 18 and 20 miles per hour, including all stops for milk collections, additional cars, etc. While in motion, they probably run about 50 miles an hour. When the milk arrives at Weehawken, it is placed on platforms, to be collected by New York and Brooklyn dealers, who send their delivery wagons to Weehawken, paying ferriage charges in both directions for their teams.

The cars used are all of the refrigerator type, having double sides, tops, and floors, with the spaces between these double partitions filled with charcoal and sawdust. Each car is equipped with two refrigerator boxes—one at each end—together holding 1,600 pounds of ice. In extremely hot weather, besides filling the ice boxes, large pieces of

cracked ice are dropped between the cans as an additional precaution. In very cold weather the cars are steam heated to prevent the milk from freezing. Cars are thoroughly cleaned at the end of each trip.

TABLE 8.—*Transportation rates on milk and cream from stations in New York to Weehawken, N. J.*[a]

[New York, Ontario and Western Railway.]

Stations.	Miles to Weehawken, N. J.	Milk.			Cream.		
		40-quart cans (cents per can).	Quart bottles (cents per 12-quart box).	Quart bottles (cents per 15-quart box).	40-quart cans (cents per can).	Quart bottles (cents per 12-quart box).	Quart bottles (cents per 15-quart box).
Firtheliffe	56						
Terwilliger	62						
Otters	67						
Crystalrun	73	26	10.2	12.7	44	15.6	19.5
Fairoaks	83						
Bloomingburg	89						
Ellenville	100						
Conklins	109						
Parksville	124						
Trout Brook	149						
Preston Park	171	29	11.1	13.8	47	16.5	20.6
Uniondale	186						
Franklin	190						
Sidney	261						
Lathams	213						
New Berlin	226						
Smyrna	237	32	12	15	50	17.4	21.7
Hamilton	247						
Deansboro	262						
Rome	280						

[a] Weehawken, N. J., is on the Hudson River directly opposite New York City, and substantially all milk received there is for distribution in the latter city.

SHIPMENTS OF MILK AND CREAM BY STEAMER TO NEW YORK CITY.

The Central-Hudson Steamboat Company's steamers plying between Hudson River points and New York carry considerable milk. Collections are made at Newburg, Fishkill, Cornwall, and Cold Spring, the milk having been brought to these landings from the adjacent country by wagons. The distance from Newburg to New York is about 58 miles.

Steamers ship milk from 6.30 to 7.30 p. m. daily, and arrive at One hundred and twenty-ninth street, New York, at 10.30 p. m., and at Franklin street at 11.30 p. m.

In warm weather ice is placed on and between the cans while in the wagons and on the steamers. About a thousand cans are handled daily, for which a rate of 32 cents per can of 40 quarts is charged.

TABLE 9.—*Number of gallons of milk and cream supplied New York City, 1885–1902.*[a]

Year.	Erie R. R.	New York Central and Hudson River R. R.	New York, Ontario and Western Rwy.	New York, Susquehanna and Western R. R.	West Shore R. R.	New York, New Haven and Hartford R. R.
1885	14,199,910	13,023,440	7,361,620	4,291,610	.....	4,036,890
1886	14,515,230	13,836,350	5,271,690	4,769,870	2,819,540	4,252,240
1887	15,123,720	14,430,720	5,373,810	5,308,720	3,711,600	4,497,350
1888	15,367,030	14,273,800	5,923,480	5,577,770	4,085,380	3,540,740
1889	15,941,290	14,807,870	6,314,100	5,487,030	4,257,940	3,229,100
1890	16,941,530	13,935,260	7,608,040	5,432,870	4,742,030	2,899,540
1891	17,513,190	12,648,950	8,883,750	5,518,740	5,649,890	2,172,650
1892	17,785,080	11,742,120	10,509,240	5,342,870	5,674,250	1,535,290
1893	16,620,580	11,852,570	10,954,840	6,434,920	4,799,160	2,557,840
1894	16,133,090	11,248,440	11,678,090	6,582,970	4,866,670	2,848,330
1895	15,348,660	11,033,050	12,709,370	6,852,090	4,725,980	2,864,910
1896	15,386,700	9,479,440	14,304,590	6,572,300	5,228,180	4,308,300
1897	15,858,430	8,826,890	14,231,300	6,908,310	6,981,280	4,810,810
1898	16,655,900	9,025,560	15,086,220	7,331,625	8,206,680	4,747,890
1899	16,461,490	12,016,300	16,919,330	7,293,180	6,739,870	4,236,740
1900	16,703,010	18,564,830	16,158,900	7,562,400	6,428,330	4,000,580
1901	17,943,170	21,260,000	16,610,600	7,400,910	6,399,280	4,161,560
1902	17,320,590	24,263,310	18,368,410	7,273,030	6,401,050	4,022,210

Year.	Delaware, Lackawanna and Western R. R.	Long Island R. R.	Central Railroad of New Jersey.	Ramsdell Boat Line.	Lehigh Valley R.R.	Other sources.	Total
1885	1,385,000	1,661,260	1,587,680	.....	.....	3,479,250	51,026,660
1886	1,403,000	1,593,320	1,676,580	.....	.....	4,358,300	54,496,120
1887	1,687,500	1,485,300	1,903,300	1,853,420	.....	2,773,200	58,148,640
1888	2,656,500	1,448,550	1,823,150	2,506,450	.....	3,009,000	60,211,850
1889	3,389,810	1,410,450	1,870,700	3,159,050	.....	2,895,500	62,730,840
1890	4,853,100	1,236,570	1,572,250	2,740,250	.....	2,839,750	64,801,190
1891	9,495,780	1,130,420	1,266,510	2,429,190	92,310	2,527,500	69,328,880
1892	13,942,500	1,871,500	836,230	2,671,750	589,540	2,179,500	74,679,870
1893	15,250,670	719,890	758,790	2,689,630	727,740	2,166,500	75,533,130
1894	16,497,730	572,170	759,980	2,809,080	1,239,380	2,152,500	77,388,430
1895	18,971,350	503,800	850,790	2,508,640	1,727,260	2,174,500	80,270,400
1896	19,630,380	380,400	946,700	2,416,500	2,106,670	2,196,000	82,956,160
1897	19,606,170	303,950	1,141,100	2,627,910	2,794,280	2,190,000	86,280,450
1898	20,933,890	218,040	962,020	2,604,490	3,908,960	2,190,000	91,871,270
1899	20,735,390	3,890	865,460	2,596,910	4,838,800	2,184,000	94,891,360
1900	16,749,980	.....	903,690	3,018,910	5,836,290	2,190,000	98,116,920
1901	16,525,320	.....	752,440	2,380,030	6,458,920	2,199,460	102,091,690
1902	17,104,600	.....	590,900	2,274,530	7,102,310	2,190,000	106,910,940

[a] Figures for this table were furnished by Mr. J. C. Anderson, general freight agent of the New York, Ontario and Western Railway.

MILK TRANSPORTATION TO CHICAGO.

LARGE INCREASE OF SUPPLY.

In four years the average daily milk supply of Chicago, Ill., has increased over 61 per cent, or from 476,992 quarts in 1898 to 772,800 quarts in 1901. As the increase in population in these four years is supposed to have been only about 11 per cent, this would seem to indicate an apparent excess in the milk supply of more than 50 per cent in proportion to the increase of population.

While there is little doubt that some share of this apparent excess is due to more accurate statistics of receipts, and also to the increased efficiency of the milk division of the health department, whereby public confidence in the quality of the milk has become greater, resulting in a larger consumption per capita, these reasons alone are not sufficient to account for the remarkable increase during this period.

USE FOR OLEOMARGARINE.

It seems probable, therefore, that the rapid growth in the oleomargarine or butterine industries of Chicago is the true explanation, and, although available statistics relating to these industries are very meager, a statement of the increase in milk and cream used by one of a number of these concerns at Chicago illustrates the increased demands made by this business upon the milk supply of the city. The quantity of milk and cream used by this firm during the year ended June 30, 1898, was 454,800 gallons; 1901, 934,160 gallons.

MILK PRICES.

The following table gives the monthly market price, in cents, per 8-gallon can of milk at Chicago for a period of four years:

Price of milk in Chicago, 1898–1901, by months, in cents for 8-gallon can.

Month.	1898.	1899.	1900.	1901.
January	$0.90	$0.95	$1.00	$1.10
February	.90	.90	1.00	1.00
March	.90	.85	.90	1.00
April	.80	.80	.90	1.00
May	.70	.65	.75	.75
June	.70	.65	.75	.75
July	.75	.75	.85	.75
August	.75	.85	.85	.80
September	.80	.90	.95	.95
October	.80	.95	.95	.95
November	1.00	1.15	1.10	1.15
December	.90	1.10	1.10	1.15
Yearly average	.82½	.87½	.92½	.94 7/12

RAILROAD SERVICE.

About 97 per cent of the milk supply of Chicago is brought in by railroads, 3 per cent being furnished by wagons from suburban territory and by persons owning a few cows in the city.

The territory covered by the railroads in making milk collections for distribution in Chicago lies in southern Wisconsin, northern Illinois, and northwestern Indiana. Although shipments are made from points as far distant as 142 miles, the great bulk of the milk comes from territory well within a radius of 100 miles of the city. Large numbers of dairy farms in this region with abundant railroad service allow Chicago to procure its milk from comparatively short distances, while cities like New York and Boston are compelled to reach out into the country hundreds of miles for a large part of their supply. As the milk hauls are comparatively short, ordinary baggage cars attached to local passenger trains are all that are required for transportation purposes. In the few cases, however, where long hauls are necessary, refrigerator cars are used.

Regarding the freight charges which are found in the following

tables, it appears that each road regulates its own rates independent of all other lines. The policy of charging a certain rate from stations within a given territory seems to have been generally adopted, but both the territory and the rates differ with different roads. Cream is carried at the same rate as milk.

CHICAGO AND GREAT WESTERN RAILWAY.

The rates presented in Table 10 are those asked by the Chicago and Great Western Railway for transporting milk from stations along the line of its railroad to Chicago. Although rates are given from points as far distant from Chicago as 126 miles, at the present time Byron, 83 miles from the city, is the farthest point from which collections are made. Trains leave Byron at 6.55 a. m. daily and arrive at Chicago at 10.35 a. m.

Large baggage cars are used, which are cooled in summer by ice tanks and warmed in winter by steam heat. The cars are frequently scrubbed.

TABLE 10.—*Transportation rates on milk and cream from stations in Illinois to Chicago.*

[Chicago and Great Western Railway.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).	12-quart cases (cents per case).	18-quart cases (cents per case).
Maywood	7	15	19	10	16
Bellewood	9	15	19	10	16
Lombard	16	15	19	11	17.5
North Glenellyn	18	15.4	19.4	11	17.5
Ingalton	26	15.5	19.5	12	19
St. Charles	31	15.8	19.8	12	19
Wasco	36	15.9	19.9	12	19
Lily Lake	40	16	20	12.5	20
Virgil	44	16	20	13.5	21
Richardson	46	16	20	13.5	21
Sycamore	52	17.5	21.5	14.5	22
Clare	59	18	22	14.5	22
Esmond	65	19	23	15	22.5
Lindenwood	70	20	24	15.5	23
Holcomb	74	21	25	15.5	23
Stillman Valley	78	22	26	15.5	23
Byron	83	22	26	16	23.5
Egan	91	22	26	16.5	24
German Valley	96	22	26	16.5	24.5
Bolton	109	22	26	16.5	24.5
Pearl City	115	22	26	16.5	24.5
Kent	119	22	26	17	25
Stockton	126	22	26	17	25

BALTIMORE AND OHIO RAILROAD.

The rates found in Table 11 are those asked by the Baltimore and Ohio Railroad for transporting milk and cream from stations along its line to Chicago. The territory covered all lies in the northwest corner of the State of Indiana, the farthest point from which milk is collected being Walkerton, 80 miles east of Chicago. Trains daily leave Walkerton at 7 a. m., and arrive at last stop in Chicago at 9.35 a. m., making a run of 80 miles in 2 hours and 35 minutes.

Ordinary baggage cars are used, which are attached to passenger trains. The cars are swept and scrubbed daily.

TABLE 11.—*Transportation rates on milk and cream from stations in Indiana to Chicago, Ill.*

[Baltimore and Ohio Railroad.]

Stations.	Miles to Chicago.	5-gallon cans (cents per can).	7-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Willow Creek	42	10	14	15	20
McCool	44				
Babcock	46				
Woodville	49				
Suman	52	12	18	20	25
Coburg	56				
Alida	58				
Rutz's	62				
Wellsboro	65				
Walkerton	80	15	20	25	30

CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD.

The rates charged by the Chicago, Rock Island and Pacific Railroad for transporting milk to Chicago are found in Table 12.

Trains leave Joliet daily at 8 a. m. The first milk is taken on at 8.10 and the last at 9 a. m. The first delivery is made at 9.15 and the last at 10.45 a. m., so that the time consumed in making the entire run of 40 miles is two hours and forty-five minutes.

The cars used are constructed after first-class baggage pattern, provided with boiler-iron floor covering, and are painted both inside and out once each twelve months. Each day at Chicago they are swept, dusted, and aired, and are also scrubbed when conditions require it. At Joliet cars are cleaned and thoroughly disinfected daily.

TABLE 12.—*Transportation rates on milk and cream from stations in Illinois to Chicago.*

[Chicago, Rock Island and Pacific Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	Stations.	Miles to Chicago.	8-gallon cans (cents per can).
Blue Island	16	15	Joliet	40	15
Midlothian	18		Basswood Crossing		18
Tinley Park	24		Minooka	51	
Mokena	30		Morris	62	20
New Lenox	34				

WABASH RAILROAD.

The rates found in Table 13 are those charged by the Wabash Railroad for transporting milk and cream to Chicago. The territory covered extends southwestward from Chicago to Essex, Ill., a distance of 60 miles.

TABLE 13.—*Transportation rates on milk and cream from stations in Illinois to Chicago.*

[Wabash Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Oak Lawn	15		
Worth	18		
Conleys			
Orland	24	15	18
Alpine	27		
Harley	30		
New Lenox	34		
Steele	34		
Brisbane	35	15	18¾
Manhattan	40		
Symerton	47	16	20
Ritchie	53		
Custer Park	55	17	21
Essex	60		

WISCONSIN CENTRAL RAILROAD.

The rates found in Table 14 are those asked by the Wisconsin Central Railroad for transporting milk and cream from stations on its line to Chicago. A few milk stations have been inserted so as to give an idea from about what distances these rates apply.

The territory covered by the Wisconsin Central in making milk collections for delivery at Chicago lies in the northeastern part of Illinois and the southeastern part of Wisconsin, and extends as far as Waukesha, Wis., 98 miles from Chicago. Milk is carried on passenger trains which leave Waukesha daily at 6.10 a. m. and arrive at Chicago at 10.30 a. m., making the run of 98 miles in four hours and twenty minutes.

Cars with middle side doors and painted floors are used. Iron strips running the entire length of the car are screwed to the floor, so that an experienced handler can slide a can of milk from the door to any part of the car without leaving the door. The milk cars are thoroughly cleaned inside twice a month.

TABLE 14.—*Transportation rates on milk and cream from stations in Illinois and Wisconsin to Chicago, Ill.*

[Wisconsin Central Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Fairview, Ill	18	15	19
Desplaines, Ill	23	15⅝	19⅞
Prairie View, Ill	34	15⅞	19¾
Grays Lake, Ill	45	16	20
Lake Villa, Ill	51	16¼	20⅛
Antioch, Ill	55	17	21
Trevor, Wis	58	17⅛	21⅛
Burlington, Wis	73	18⅛	22⅛
Honey Creek, Wis	78	19	23
Mukwonago, Wis	86	20	24
Waukesha, Wis	98	21	25

CHICAGO AND ERIE RAILROAD.

Rates charged by the Chicago and Erie Railroad in transporting milk to Chicago are found in Table 15. The milk stations given do not comprise nearly all from which shipments are made, but are inserted simply to indicate from about what distances these rates apply.

The territory covered is located in northwestern Indiana and extends to Huntington, Ind., 142 miles from Chicago. Milk trains make the run between Huntington and Chicago in six hours and thirty minutes.

Regular refrigerator milk cars are used. These cars have asbestos-lined walls, sheet-steel floors, and regular refrigerator doors which swing in. Ice boxes having a capacity of 500 pounds are located in both ends of the cars, and, if necessary, the temperature can be run down to about 40° F. Milk is shipped by farmers direct to Chicago dealers in 8-gallon cans, while a very small amount is shipped from creameries or shipping stations in 12-quart cases.

Milk or cream coming from a distance of 70 miles or over is handled through regular shipping stations designed for that purpose. These plants consist of an ice house, vat room, and boiler room, and are equipped with boilers, separators, can vats for cooling purposes, and late improved pasteurizers. Farmers at points where these plants are located sell their milk direct to the parties in charge, who, in turn, pasteurize it and ship it to Chicago.

TABLE 15.—*Transportation rates on milk and cream from stations in Indiana to Chicago, Ill.*

[Chicago and Erie Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	Stations.	Miles to Chicago.	8-gallon cans (cents per can).
Highlands	26	14	Bass Lake	79	20
Griffith	29	15	Monterey	85	20
Crown Point	36	15	Leiters	91	20
Palmer	43	15	Rochester	101	20
Birdie		16	Akron	111	21
Boone Grove	49	17	Laketon	123	21
Kouts	55	18	Boliver	124	22
Wilders	63	19	Bippus	134	22
North Judson	70	19	Huntington	142	22

CHICAGO, BURLINGTON AND QUINCY RAILROAD.

Table 16 shows the rates asked by the Chicago, Burlington and Quincy Railroad for transporting milk from points in Illinois to Chicago.

The territory covered in making milk collections for distribution in Chicago is within a radius of 68 miles. A milk train leaves Shabbona, Ill., daily at 6.40 a. m. and arrives at first unloading platform in Chicago at 9.30 a. m.

The cars used in this service are built like ordinary refrigerator cars and have boxes in which ice can be put. They also are provided with ventilators and have solid iron floors, which enables them to be cleaned readily. These cars are thoroughly cleaned every day in summer and every other day in winter.

At nearly all shipping points platforms with shed covers are built on the south side of the track. These covers are so constructed as to keep off as much of the sun's heat as possible and also to protect the cans from snow in winter.

TABLE 16.—*Transportation rates on milk and cream from stations in Illinois to Chicago.*

[Chicago, Burlington and Quincy Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	Stations.	Miles to Chicago.	8-gallon cans (cents per can).
Riverside	11	15	Aurora	37	16
Lagrange	14		Montgomery	40	16
Western Springs	15		Bristol	46	17
Hinsdale	17		Plano	52	18
Greggs	19		Sandwich	56	18
Downers Grove	21		Somonauk	59	18
Belmont	23		Leland	66	19
Lisle	25		Earlville	72	20
Naperville	29		Meriden	78	21
Dupage	30		Mendota	83	22

ATCHISON, TOPEKA AND SANTA FE RAILWAY.

The rates found in Table 17 are those asked by the Atchison, Topeka and Santa Fe Railway for transporting milk from stations along its line to Chicago.

The territory covered in making milk collections lies through the counties of Cook, Dupage, Will, Grundy, and Lasalle, to Streator, Ill., 94 miles from Chicago. Trains leave Streator daily at 5.45 a. m. and arrive at Chicago at 9.25 a. m., making the run in three hours and thirty minutes.

The cars used are of the standard baggage type, with a door at each end and two doors on each side. The floors are covered with galvanized iron, soldered water-tight, with ample drainage through the floor by means of pipes. On these floors are fastened strips of boiler iron lengthwise with the car, with solid plates of the same metal at each side door. This enables the baggage man to slide the cans to almost any part of the car, thus greatly facilitating loading and unloading. The cars are washed with water and thoroughly swept daily.

TABLE 17.—*Transportation rates on milk and cream from stations in Illinois to Chicago.*

[Atchison, Topeka and Santa Fe Railway.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	Stations.	Miles to Chicago.	8-gallon cans (cents per can).
McCook	17	13¾	Blodgett		17
Gary	19	13¾	Knappa	56	17
Willow Springs	23	13¾	Lorenzo	57	17
Byrneville	25	14	Coal City	63	18
Lemont	29	14¾	Mazon	71	18
Romeo	33	15	Verona	75	19
Lockport	37	15	Kinsman	79	20
Joliet	41	15	Ransom	84	21
Millsdale	50	16	Kernan	89	22
Drummond	52	17	Streator	94	22½

CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY.

The rates asked by the Chicago, Milwaukee and St. Paul Railway for transporting milk and cream to Chicago are found in Table 18.

At the present time the maximum distance from which milk is shipped to Chicago is about 90 miles, and the run is made in from two and one-half to three hours. Regular milk cars, having four doors, one at each end and one on each side, are used. The bottoms of these cars are slatted, with a trough in the center, so that by using hot water the cars can be readily cleaned and kept in a sanitary condition. Milk conductors are employed on each train carrying milk, whose duties are simply to look after the milk business, check up reports, and see that prompt delivery is made.

TABLE 18.—*Transportation rates on milk and cream from stations in Illinois and Wisconsin to Chicago, Ill.*

[Chicago, Milwaukee and St. Paul Railway.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).	12-quart cases (cents per case).	18-quart cases (cents per case).
Grayland, Ill	8	14½	18½	10	16
May Fair, Ill	9	14½	18½	10	16
Forest Glen, Ill	10	15	19	10	16
Glenview, Ill	17	15	19	10	16
Shermerville, Ill	20	15½	19½	11	16½
Deerfield, Ill	23	15½	19½	11	17½
Everett, Ill	28	15½	19½	11	17½
Roundout, Ill	32	16	20	12	19
Elgin, Ill	37	16	20	12½	20
Hampshire, Ill	51	16	20	13½	21
Genoa, Ill	59	17½	21½	14	21½
Kirkland, Ill	67	18	22	14½	22
Fairdale, Ill	71	19	23	15	22½
Monroe Center, Ill	75	20	24	15½	23
Davis Junction, Ill	80	21	25	15½	23
Byron, Ill	89	22	26	16	23½
Cedarburg, Wis	107	22	26		
Random Lake, Wis	125	22	26		
Plymouth, Wis	139	22	26	17½	25½

GRAND TRUNK RAILWAY.

The rates presented in Table 19 are those charged by the Grand Trunk Railway for transporting milk from stations along its line to Chicago, the same rate applying for all distances. The farthest point of shipment is Valparaiso, Ind., 55 miles from Chicago. Milk is handled exclusively in baggage cars attached to local passenger trains. The cars are cleaned from time to time as required.

TABLE 19.—*Transportation rates on milk from stations in Illinois and Indiana to Chicago, Ill.*

[Grand Trunk Railway.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Oakglen, Ill	28	15	20
Lattaville, Ind	39		
Ainsworth, Ind	45		
Sedley, Ind	50		
Valparaiso, Ind	55		

ILLINOIS CENTRAL RAILROAD.

The rates found in Table No. 20 are those charged by the Illinois Central Railroad for transporting milk to Chicago. Not all the stations from which milk is shipped are given, but enough are presented to illustrate from about what distances the rates apply. Milk is carried in ordinary baggage cars attached to passenger trains.

TABLE 20.—*Transportation rates on milk from stations in Illinois to Chicago.*

[Illinois Central Railroad.]

Stations.	Miles to Chicago.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Chicago division:			
Homewood		15.3	19.3
Mattison	28	15.4	19.4
Monee	34	15.5	19.5
Peotone	40	15.9	19.9
Kankakee	56	16.0	20.0
Chebanse	64	17.5	21.5
Ashkum	73	19.0	23.0
Danforth	77	22.0	26.0
Irwin	65	17.5	21.5
Herscher	71	19.0	23.0
Buckingham	75	21.0	25.0
Cabery	79	22.0	26.0
Freeport division:			
South Elmhurst		15.0	19.0
South Addison	22	15.3	19.3
Cloverdale	30	15.4	19.4
Granger	33	15.5	19.5
Coleman	40	15.9	19.9
Burlington	53	16.0	20.0
Genoa	62	17.5	21.5
Irene	74	19.0	23.0
Perryville	79	20.0	24.0
Seward	100	22.0	26.0

FREIGHT RATES ON MILK TO PHILADELPHIA.

Philadelphia is in the midst of some of the finest dairy country in the East, and, like Chicago, does not have to reach far for the bulk of its milk supply. A large part of it comes from territory within 30 miles of the city, although, of course, considerable milk is shipped from points at a much greater distance.

A recent estimate, made by an official of the Philadelphia board of health, places the annual supply of milk for that city in 1900 at 110,000,000 quarts, an increase of 10,000,000 quarts in nine years. The average yearly milk supply per capita for 1900 was slightly over 85 quarts, or nearly one-half pint per individual per day.

The producer receives a price of 2½ to 3 cents per quart in summer for his milk and 3½ to 4 cents in winter.[a] The retail price of milk ranges from 6 to 8 cents a quart, which indicates a slight increase during the past ten years.

About 90 per cent of the milk consumed in Philadelphia is brought in by the railroads, while the balance of 10 per cent is supplied by wagons from city and suburban territory. The railroad milk is procured from Chester, Delaware, Bucks, Montgomery, and adjacent counties in Pennsylvania, and from the States of New York, New Jersey, and Delaware.

Owing to the short distances milk is carried by the railroads, baggage cars are used largely for transportation purposes, refrigerator cars being employed for long hauls only. These cars are generally attached to local passenger trains.

Milk rates seem to be regulated by what might be termed a divisional system, a certain rate being charged from all stations on a prescribed division. In some instances this causes a shipper living at a shorter distance on one division to be charged more than one on another division living at a longer distance. Rates on cream are generally double those on milk.

PHILADELPHIA AND READING RAILROAD.

The rates found in Table 21 are those charged by the Philadelphia and Reading Railroad in transporting milk and cream from stations on its various divisions to Philadelphia. It would appear in some instances that a larger rate is charged for a long than for a short haul. This is occasioned by the stations showing these differences in rates being located on different divisions, each division having its individual rate.

The territory covered by this railroad in making milk collections for distribution in Philadelphia lies in Pennsylvania, New Jersey, and

[a] Industrial Commission's report on the Distribution of Farm Products.

Delaware, the farthest points from which shipments are made being Allentown, Pa., 61 miles, and Elverson, Pa., 79 miles, from Philadelphia.

The cars used are of the plain box pattern, after the fashion of standard baggage cars, and nothing is permitted to be loaded into these cars which would be injurious to the milk. At both terminals the cars are thoroughly cleaned daily.

The running time of milk trains varies from 20 to 30 miles per hour.

TABLE 21.—*Transportation rates on milk and cream from stations in Pennsylvania and New Jersey to Philadelphia, Pa.*

[Philadelphia and Reading Railroad.]

Stations.	Miles to Philadelphia.	Milk.		Cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Norristown, Pa	16	7½	15	15	30
Gwynedd, Pa	17				
North Wales, Pa	19	10	20	20	40
Parkland, Pa	20	7½	15	15	30
Port Kennedy, Pa	20				
Langhorne, Pa	21	10	20	20	40
Grenoble, Pa	22	7½	15	15	30
Newtown, Pa	23				
Rushland, Pa	23				
Byers, Pa	38				
Barto, Pa	52				
Weston, N. J	53	10	20	20	40
Bethlehem, Pa	54				
Reading, Pa	58				
Allentown, Pa	61				

PENNSYLVANIA RAILROAD.

The rates found in Table 22 are those charged by the Pennsylvania Railroad for transporting milk and cream from stations on its various divisions to Philadelphia. A few stations have been inserted so as to show from about what distances these rates apply.

Different rates are made for different divisions, and for that reason it happens that Haddenfield, N. J., which is only 7 miles from Philadelphia, pays 20 cents per 40-quart can for shipping its milk to Philadelphia, while Chester Heights, Pa., 19 miles from Philadelphia, is charged only 15 cents for a like quantity.

Rates in force on the Pennsylvania Railroad division are not included in this table. They are as follows:

Distance.	Milk per 40 quarts (cents).	Cream per 40 quarts (cents).
For distance of 60 miles or less when no transfer is required	15	30
For distance of 60 miles or less when transfer is required	20	40
For distance of over 60 and not over 90 miles when no transfer is required	24	48
For distance of over 60 and not over 90 miles when transfer is required	29	58

The Pennsylvania Railroad collects milk within a radius of about 60 miles of Philadelphia, although the greater part comes from within 30 miles. No special trains or cars are used, milk being carried in ordinary baggage cars attached to regular passenger trains. Cars are scrubbed and cleaned in the usual manner.

TABLE 22.—*Transportation rates on milk and cream from stations in Pennsylvania and New Jersey to Philadelphia, Pa.*

[Pennsylvania Railroad.]

Stations.	Miles to Philadelphia.	Milk.		Cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Haddonfield, N. J	7	10	20	20	40
Chester Heights, Pa	19	7½	15	15	30
Birmingham, N. J	24				
Salem, N. J	38				
Hightstown, N. J	41	10	20	20	40
Plainsboro, N. J	45				
Oxford, Pa	49				

BALTIMORE AND OHIO RAILROAD.

The rates found in Table 23 are those asked by the Baltimore and Ohio Railroad for transporting milk and cream from stations along its line to Philadelphia.

In Table 24 the rates presented are those charged for shipments of milk and cream originating on the Wilmington branch of the Philadelphia and Reading Railroad but carried into Philadelphia over the Baltimore and Ohio Railroad from Singerly, Md. Milk is transported in ordinary express and baggage cars, attached to local passenger trains. These cars are swept daily and scrubbed with water once a week.

A milk train leaves Singerly daily at 7.20 a. m. and arrives at Philadelphia at 8.50 a. m. It connects with the train that leaves Landenburg at 6.55 a. m., and it also receives two cars from the Philadelphia and Reading Railroad at Elsmere Junction.

TABLE 23.—*Transportation rates on milk or cream from stations in Pennsylvania, Delaware, and Maryland to Philadelphia, Pa.*

[Baltimore and Ohio Railroad.]

Stations.	Miles to Philadelphia.	20-quart cans (cents per can).	40-quart cans (cents per can).
Felton, Pa	14		
Boothwyn, Pa	17		
Ogden, Pa	17		
Carpenter, Del	18		
Harvey, Del	20		
Silverside, Del	22		
Carrcroft, Del	24		
Concord, Del	31		
Stanton, Del	37		
Newark, Del	41	7½	15
Barksdale, Md	43		
Singerly, Md	.....		
Wooddale, Del	31		
Mount Cuba, Del	34		
Ashland, Del	35		
Hockessin, Del	38		
Eden, Pa	40		
Broad Run, Pa	41		
Landenberg, Pa	43		

TABLE 24.—*Transportation rates on milk and cream from stations in Delaware and Pennsylvania to Philadelphia, Pa.*

[Baltimore and Ohio and Philadelphia and Reading Railroads.]

Stations.	Miles to Philadelphia.	Milk.		Cream.	
		20-quart cans (centsper can).	40-quart cans (centsper can).	20-quart cans (centsper can).	40-quart cans (centsper can).
Granogue, Del	38				
Brookfield, Pa	40				
Chadds Ford Junction, Pa	42				
Britton Bridge, Pa	43				
Pocopson, Pa	45				
Lenape, Pa	46				
Wawasett, Pa	48				
Northbrook, Pa	50				
Glenhall, Pa	51	7½	15	15	30
Embreville, Pa	53				
Laurel, Pa	55				
Mortonville, Pa	56				
Wagontown, Pa	63				
Cedarknoll, Pa	65				
Brandamore, Pa	68				
Elverson, Pa	79				

MILK TRANSPORTATION TO ST. LOUIS.

In 1900 the average daily milk and cream supply of St. Louis, Mo., was estimated to be 29,375 gallons. The average daily supply per capita was a little over two-fifths of a pint.

St. Louis, unlike other large cities, procures the bulk of its milk supply from within the city limits. A recent estimate of an official of the St. Louis health department places the number of city dairies at about 400, containing approximately 8,000 cows. These cows, which are largely fed on spent grain, from the great breweries of St. Louis,

produce about 57 per cent of the milk supply, the balance being brought in from the adjacent country by the railroads. City-produced milk costs the consumer 5 cents per quart, while railroad milk generally retails at 6.25 cents, although some milk is sold as high as 12½ cents per quart.

It is owing to the extremely cheap methods by which milk is produced in the city that production in the adjacent country is kept at a low point, as St. Louis is reported to be surrounded by farm lands unsurpassed in natural adaptability for dairying.

The railroads' milk collections are made in eastern Missouri and southwestern Illinois, and, although a little milk comes from a distance of 150 miles, the great bulk of it originates within 50 miles of the city. An express company handles part of the railroad milk, and, as the hauls are generally short, express or baggage cars are used entirely, refrigeration, as a rule, not being necessary.

Rates of charge for transporting milk differ on different railroads, but each line employs what might be termed a zone system, charging so much per can from all stations within a certain territory, the rate increasing the farther the zone is located from the city.

Cream is generally carried at the same rate as milk, although in one instance it is noted that double the milk rate is asked.

ST. LOUIS, KANSAS CITY AND COLORADO RAILROAD.

The rates found in Table 25 are those charged for transporting milk and cream from stations along the line of the St. Louis, Kansas City and Colorado Railroad to St. Louis. Milk shipments over this line are entirely controlled by an express company.

TABLE 25.—*Transportation rates on milk and cream from stations in Missouri to St. Louis.*

[St. Louis, Kansas City and Colorado Railroad.]

Stations.	Miles to St. Louis.	40-quart cans (cents per can).
Maryland Heights	15	10
Bond		
Chesterfield	26	12
Gumbo	28	

ST. LOUIS AND SAN FRANCISCO RAILROAD.

The rates found in Table 26 are charged for transporting milk and cream from stations along the line of the St. Louis and San Francisco Railroad to St. Louis. An express company has entire control of this business, and all shipments are made in either express or baggage cars.

TABLE 26.—*Transportation rates on milk and cream from stations in Missouri to St. Louis.*

[St. Louis and San Francisco Railroad.]

Stations.	Miles to St. Louis.	40-quart cans (cents per can).
Meramec Highlands	16	12
Keyes Station	17	
Crescent	25	
Eureka	27	
Allenton	30	

HANNIBAL AND ST. JOSEPH RAILROAD.

The Hannibal and St. Joseph Railroad charges the rates found in Table 27 for transporting milk and cream from stations along its line to St. Louis. Shipments are made from points in Missouri as far distant as 150 miles and in Illinois as far distant as 77 miles. Ordinary baggage cars attached to local passenger trains are used for transportation purposes. These cars are thoroughly cleaned each time they come into St. Louis.

TABLE 27.—*Transportation rates on milk and cream from stations in Missouri and Illinois to St. Louis, Mo.*

[Hannibal and St. Joseph Railroad.]

Stations.	Miles to St. Louis.	8-gallon cans (cents per can).
Texas Junction, Mo	27	15
Orchard Farm, Mo	34	
Piasa, Ill	44	17
Medora, Ill	48	
Winfield, Mo	56	16
Elsberry, Mo	68	17
Whitehall, Ill	73	18
West Roodhouse, Ill	76	
Barrow, Ill	77	
Clarksville, Mo	84	
Lagrange, Mo	150	25

WABASH RAILROAD.

The Wabash Railroad charges the rates found in Table 28 for transporting milk from stations along its line to St. Louis. Cream is transported for double the milk rates. The territory covered lies within the State of Illinois and extends to Litchfield, 52 miles from the city. Milk is carried in baggage cars attached to regular passenger trains. These cars are cleaned at the end of each trip.

TABLE 28.—*Transportation rates on milk from stations in Illinois to St. Louis, Mo.*

[Wabash Railroad.]

Stations.	Miles to St. Louis.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Carpenter	28	15.6	19.5
Worden	32	15.8	19.75
Mount Olive	42	16.25	20.25
Litchfield	52	17.00	21.00

TRANSPORTATION OF MILK TO BOSTON.

GROWTH OF SUPPLY AND MANNER OF CONSUMPTION.

In 1900 the milk received from the railroads at Boston, Mass., amounted to over 90,000,000 quarts. Add to this the supply furnished by wagons from urban and suburban territory and the total is increased to 120,000,000 quarts approximately. About one-sixth of this supply, however, was utilized almost entirely in the manufacture of butter, so that the actual consumption of milk per capita per day during that period was considerably less than a pint.

The following table shows the amount of milk brought into Boston by the railroads during the years 1892 to 1900 inclusive:

TABLE 29.—*Milk carried to Boston by railroads, 1892–1900.*

Years.	Cans containing 8¼ quarts each.		
	Receipts.	Sales.	Made into butter.
1892	9,212,667	7,315,135	1,897,532
1893	9,263,487	7,619,722	1,643,765
1894	9,705,447	7,657,421	2,048,026
1895	9,856,500	8,040,732	1,815,768
1896	10,772,108	8,087,378	2,684,730
1897	11,798,191	8,738,572	3,059,619
1898	11,317,761	8,564,682	2,753,079
1899	11,234,764	8,911,971	2,322,793
1900	10,607,684	8,975,538	1,632,146

It will be noted that, although the receipts of milk for 1900 were somewhat less than those for the four preceding years, yet, for the entire period they have materially increased. The quantity not used directly, on the other hand, although very irregular from year to year, shows no such net gain as the receipts. The real gain, therefore, occurs in the sales which represent closely the local consumption of the raw material, but as this gain is largely due to the increase in population, it does not necessarily follow that the consumption per individual was larger in 1900 than in the earlier years of the decade. The increase in Boston's population during the past ten years has been considerably over 100,000.

Boston's railroad milk supply is contributed by the States of Maine, New Hampshire, Vermont, Massachusetts, and Connecticut, all the New England States, except Rhode Island, being represented. Consignments are made from points as far distant as 140 miles from the city.

BUSINESS ARRANGEMENTS.

This entire supply is largely controlled by a few wholesale milk contractors who deal directly with the producers, and transport the milk which they virtually buy on the farm in regular milk cars

rented the year round from the railroads. These cars are built especially for the business, being 45 to 50 feet long, exclusive of platforms, and divided into three parts, viz, an office about 8 feet long in the middle of the car, and a compartment on either side for carrying the milk having 5-foot doors on either side for receiving and delivering milk, and 4 cupboards, one in each corner, which hold 90 cans each. Such milk as can not be put in the cupboard is placed upon the floor, The carrying capacity of these cars is 1,000 cans each.

The rental asked by the railroads is $100 per car per mile per annum, but the minimum charge for any one car can not be less than $4.000 a year.

HOW THE PRICE IS DETERMINED.

Boston's wholesale milk price, which is the result of an agreement between the producers and the wholesale contractors and is known as the Boston price, is purely theoretical in nature and is used simply as a basis to determine the price to be paid the producers. For this purpose the outlying districts which supply Boston with milk are divided into zones, and a differential established for each zone, so that the price the producer receives for his milk is the Boston price minus the zone differential.

The following differentials which are, therefore, in the nature of freight charges, are those used by the wholesale contractors to determine what price they shall pay the producers for their milk. They apply on cans of 8½ quarts capacity:

	Cents.
For stations between 17 and 23 miles from Boston	8
For stations between 23 and 36 miles from Boston	9
For stations between 36 and 56 miles from Boston	10
For stations between 56 and 76 miles from Boston	11
And 1 cent for each additional 20 miles.	

The theoretical Boston wholesale price on cans of 8½ quarts capacity has been for several years as follows:

Wholesale prices of milk at Boston, 1886 to 1901.

Years.	Summer (cents per can).	Winter (cents per can).	Years.	Summer (cents per can).	Winter (cents per can).
1886	30	36	1894	33	37
1887	30	36	1895	33	37
1888	32	38	1896	33	35
1889	32	38	1897	33	35
1890	32	36	1898	32	34
1891	33	37	1899	32	34
1892	33	37	1900	33	36
1893	33	37	1901	33	37

THE COLLECTION OF MILK FOR BALTIMORE.

The average daily milk supply of Baltimore, Md., is approximately 25,000 gallons, or 9,125,000 gallons per annum. The average daily supply per capita is a little less than two-fifths of a pint. About 78 per cent of this supply is brought in by the railroads, while the balance is furnished by herds within the city limits or delivered by wagons from suburban territory. The wholesale price of milk at Baltimore is ordinarily from 14 to 16 cents per gallon, while the general retail price, delivered at houses, varies from 5 to 8 cents per quart, although there is a small quantity sold at as high as 10 cents a quart. During the last ten years milk has cheapened in value 20 to 25 per cent.

Five railroads transport milk to Baltimore. The country from which collections are made lies in Baltimore, Frederick, Carroll, Harford, Howard, and Cecil counties, Md., and in Adams and York counties, Pa. A large part of the milk comes from within a distance of 50 miles of the city, and is generally carried in baggage cars attached to local passenger trains. A few refrigerator cars are employed.

Rates of charge for transporting milk and cream differ materially on different railroads. One line charges a uniform rate of 15 cents per 40-quart can for all milk shipments carried from 15 to 57 miles. Another road asks 20 cents per 40-quart can, the distance varying from 4 to 44 miles, while still another charges from 10 to 30 cents for a 40-quart can, regulating its charges according to distances. This railroad's cream rates are double those asked for milk.

WESTERN MARYLAND RAILROAD.

The rates found in Table 30 are those charged by the Western Maryland Railroad for transporting milk and cream from stations along its line to Baltimore. The charges on milk vary from 1 to 3 cents per gallon, according to distance from Baltimore. Cream is carried at double the milk rates. These rates apply only to shipments in baggage cars. When refrigerator cars are employed the rate is 3 cents per gallon, except from points within 50 miles of Baltimore, when the rate is 2½ cents per gallon.

The territory covered by this railroad in making milk and cream collections for distribution in Baltimore lies in northeast Maryland and southern Pennsylvania. Where shipments are made from territory within 55 miles of Baltimore, milk cars similar in construction to baggage cars are used and are attached to local passenger trains. Milk coming from a more distant territory is transported in regular refrigerator cars, which are run by passenger-train service. A little milk is shipped in refrigerator cars at a distance of less than 50 miles from the city. Milk cars are regularly scrubbed with hot water.

TABLE 30.—*Transportation rates on milk and cream from stations in Maryland to Baltimore.*

[Western Maryland Railroad.]

Stations.	Miles to Baltimore.	Milk.		Cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Arlington	7	5	10	10	20
Owings Mills	15				
Glyndon	19	7½	15	15	30
Woodensburg	22				
Fairview	24				
Arcadia	27				
Westminster	34	10	20	20	40
New Windsor	41				
Union Bridge	45				
Bruceville	49				
Thurmont	59	15	30	30	60

MARYLAND AND PENNSYLVANIA RAILROAD.

The rates found in Table 31 are those charged by the Maryland and Pennsylvania Railroad for transporting milk from stations along its line to Baltimore. The territory covered in making milk collections lies in Baltimore and Howard counties, Md., and York County, Pa. Trains arrive at Baltimore at 8.25 and 9.05 a. m. and 5.55 p. m. The cars used are of the regular baggage-car pattern, with hard-wood floors. They are cleaned daily by scrubbing.

TABLE 31.—*Transportation rates on milk from stations in Maryland and Pennsylvania to Baltimore, Md.*

[Maryland and Pennsylvania Railroad.]

Stations.	Miles to Baltimore.	40-quart cans (cents per can).
Woodbrook, Md	5	
Oakleigh, Md	10	
Lochraven, Md	12	
Summerfield, Md	12½	
Notch Cliff, Md	13	
Glenarm, Md	14	
Longgreen, Md	16	
Hyde, Md	17	
Baldwin, Md	18	
Laurel Brook, Md	21	20
Fallston, Md	22	
Watervale, Md	24	
Belair, Md	26	
Bynum, Md	28	
Sharon, Md	32	
The Rocks, Md	35	
Highland, Md	38	
Cambria, Md	42	
Delta, Pa	44	

BALTIMORE AND OHIO RAILROAD.

The Baltimore and Ohio Railroad asks the rates found in Table 32 for transporting milk and cream from stations along the line of its

railroad to Baltimore. A single rate of 7½ cents for a 20-quart can, or 15 cents for a 40-quart can, is asked from all stations which lie within 60 miles of Baltimore, and the same rate applies on both milk and cream.

Milk collections are made from as far east as Childs, Md., 52 miles from Baltimore, and as far west as Ijamsville, Md., 53 miles distant. A train leaving Childs daily at 7.34 a. m., and arriving at Baltimore at 9.25 a. m., carries the milk over that division. Another train handles milk between Ijamsville and Mount Airy for Baltimore, leaving Ijamsville at 6.30 a. m. and arriving at Baltimore at 8.50 a. m. The train collecting milk between Mount Airy and Baltimore leaves Mount Airy at 5.25 a. m. and arrives at Baltimore at 7.40 a. m.

Ordinary baggage cars are used for transportation purposes. The cars are fitted with iron slats on the floor, so that milk cans can be easily slid from the door to either end of the car. Cars are scrubbed twice a month during winter months and from three to four times during the summer months.

TABLE 32.—*Transportation rates on milk and cream from stations in Maryland to Baltimore.*

[Baltimore and Ohio Railroad.]

Stations.	Miles to Baltimore.	Milk or cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).
Ellicott City	15		
Alberton	20		
Woodstock	25		
Marriottsville	27		
Henryton	28		
Sykesville	32		
Hoods Mills	34		
Morgan	36		
Woodbine	37	7½	15
Watersville	40		
Mountairy	43		
Plane No. 4	46		
Bartholows	48		
Monrovia	50		
Wood	52		
Ijamsville	53		
Reels Mill	57		

SHIPMENTS OF MILK TO CLEVELAND.

PARTICULARS OF TRANSPORTATION.

The milk supply of Cleveland, Ohio, has increased from 5,572,000 gallons in 1884 to 8,892,000 in 1901. The average milk supply per capita for 1900 was nearly half a pint a day. The wholesale price of milk varies from 15 to 17 cents per gallon, while the retail price is from 5 to 7 cents per quart.

According to a recent estimate of an official of the public health division of the police department of Cleveland, 60 per cent of Cleveland's

milk supply is brought in by the steam railroads from outlying districts, 24 per cent is collected by electric roads, and 16 per cent by wagons from urban and suburban territory. All railroad milk comes from territory within the State of Ohio, and although shipments are made from as far distant as 60 miles, the bulk of the milk comes from points within 40 miles of the city. Milk is brought to the city by electric lines from distances varying from 10 to 45 miles. Most of the milk originating within 10 miles of the city is carried by wagons. Refrigerator cars are not employed by either the steam or electric lines. The milk hauls are all comparatively short and are made either in early morning or in the evening, the milk arriving in the city in first-class condition.

Freight charges on shipments of milk to Cleveland are, generally speaking, 15 cents for a 40-quart can. A few exceptions to this general policy are noted, however, some roads not in competition with the electric lines charging from 15 to 25 cents per 40 quarts, according to distance. In one or two instances where the haul is short the electric lines charge 10 cents per 40-quart can. Cream is generally carried at the same rate as milk.

ERIE RAILROAD.

The rates presented in Table 33 are those asked by the Erie Railroad Company for carrying milk from stations along its line to Cleveland. A single rate covers all distances. The territory from which milk is procured by this line lies between Phalanx and Randall, Ohio, a distance of 34 miles. Ordinary baggage cars, with wooden floors, are used. Milk trains are operated on passenger schedule, and have all the rights of first-class trains. The cars are washed out at regular intervals.

TABLE 33.—*Transportation rates on milk and cream from stations in Ohio to Cleveland.*

[Erie Railroad.]

Stations.	Miles to Cleveland.	5-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Randall	11	7½	12	15
Solon	16			
Geauga Lake	20			
Aurora	24			
Mantua	30			
Hiram	34			
Garrettsville	37			

NEW YORK, CHICAGO AND ST. LOUIS RAILROAD.

The New York, Chicago and St. Louis Railroad charges the rates found in Table 34 for milk shipments made from stations along its line to Cleveland. The territory covered in making collections for distribution in Cleveland lies within a distance of 50 miles of that city. No

special milk trains are operated, as the milk is carried in regular baggage cars attached to local passenger trains.

TABLE 34.—*Transportation rates on milk from stations in Ohio to Cleveland.*

[New York, Chicago and St. Louis Railroad.]

Stations.	Miles to Cleveland.	5-gallon cans (cents per can).	7-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).
West Dover	15	7	10	12	15
Willoughby	19				
Mentor	23				
Perry	35	12	17	20	25
Madison	40				

LAKE SHORE AND MICHIGAN SOUTHERN RAILROAD.

The rates herewith presented in Table 35 are those asked by the Lake Shore and Michigan Southern Railroad for transporting milk from stations along its line to Cleveland. Milk is collected from a distance of 45 miles east and 60 miles west of Cleveland. It is handled on baggage cars of the regular passenger trains.

TABLE 35.—*Transportation rates on milk from stations in Ohio to Cleveland.*

[Lake Shore and Michigan Southern Railroad.]

Stations.	Miles to Cleveland.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Shawville	21	12	15
Elyria	25		
Kipton	39	16	20
Wakeman	44		
Monroeville	60	20	25

CLEVELAND, CINCINNATI, CHICAGO, AND ST. LOUIS RAILWAY.

The Cleveland, Cincinnati, Chicago, and St. Louis Railway charges the rates found in Table 36 for carrying milk and cream to Cleveland. The territory from which milk is collected is located wholly in the State of Ohio and extends 37 miles west of Cleveland. The milk is shipped in regular baggage cars attached to local passenger trains, the schedule time of which is about 40 miles an hour.

TABLE 36.—*Transportation rates on milk and cream from stations in Ohio to Cleveland.*

[Cleveland, Cincinnati, Chicago and St. Louis Railway.]

Stations.	Miles to Cleveland.	5-gallon cans (cents per can).	7-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).
West View	16	7	10	12	15
Columbia	18				
North Eaton	21				
La Grange	29				
Wellington	36				

CLEVELAND TERMINAL AND VALLEY RAILROAD.

The rates presented in Table 37 are those asked by the Cleveland Terminal and Valley Railroad for transporting milk to Cleveland. Milk is shipped from Ira, Ohio, and intermediate stations. Trains arrive at Cleveland at 8.30 a. m. and 6.30 p. m. daily. Milk is handled in regular baggage cars attached to local passenger trains. Cars are cleaned as often as necessary.

TABLE 37.—*Transportation rates on milk from stations in Ohio to Cleveland.*

[Cleveland Terminal and Valley Railroad.]

Stations.	Miles to Cleveland.	5-gallon cans (cents per can).	7-gallon cans (cents per can).	10-gallon cans (cents per can).
Southpark	11	9	11	15
Tinkers Creek	12			
Alexanders	13			
Bucksville	16			
Vaughn	19			
Boston	20			
Peninsula	22			
Everett	25			

WHEELING AND LAKE ERIE RAILROAD.

The Wheeling and Lake Erie Railroad charges the rates presented in Table 38 for shipments of milk over its line to Cleveland. The territory covered by this road in making milk collections for distribution in Cleveland is included between Bedford and Kent, Ohio, the latter and farther point being 32 miles distant. During the winter months a special daily milk train leaves Kent at 5.45 a. m. and arrives at Cleveland at 7.50 a. m. During the summer months two daily milk trains are operated, leaving Kent at 5.20 a. m. and 5.20 p. m. and arriving at Cleveland at 7.25 a. m. and 7.20 p. m.

Milk cars are constructed on the same lines as ordinary baggage cars and are attached to local passenger trains. These cars are thoroughly cleaned every twenty-four hours.

TABLE 38.—*Transportation rates on milk from stations in Ohio to Cleveland.*

[Wheeling and Lake Erie Railroad.]

Stations.	Miles to Cleveland.	40-quart cans (cents per can).
Bedford	12	15
Falls Junction	16	
Twinsburg	20	
Moran	24	
Kent	32	

CLEVELAND, LORAIN AND WHEELING RAILWAY.

The Cleveland, Lorain and Wheeling Railway asks the rates found in Table 39 for shipments of milk along its line to Cleveland. Milk comes from territory as far distant as Sterling, Ohio, 45 miles. Regular baggage cars are used, attached to local passenger trains.

TABLE 39.—*Transportation rates on milk from stations in Ohio to Cleveland.*

[Cleveland, Lorain and Wheeling Railway.]

Stations.	Miles to Cleveland.	40-quart cans (cents per can).
Perma	9	15
Berea	14	
Liverpool	23	
Lester	28	
Medina	33	
Chippewa Lake	38	
Seville	42	
Sterling	45	

TRANSPORTATION BY ELECTRIC LINES.

Nearly one-fourth of the milk supply of Cleveland is brought into the city by electric lines.

The Eastern Ohio Traction Company gathers milk at almost every crossroad the entire length of its two divisions, beginning at the ends of the lines, which are 40 and 45 miles, respectively, out of Cleveland. The time consumed in making the maximum run is about two hours, and the charges for transporting the milk to Cleveland are 2 cents per gallon from all stations on the Cleveland and Eastern Division and $1\frac{1}{2}$ cents on the Cleveland and Garrettsville Division, the difference in rates being due to different arrangements with terminal roads in the city.

The cars used for the transportation of milk are very similar in construction to the regular baggage car used on the steam railroads. These cars are cleaned after the usual method of cleaning cars about three times a week.

In summer the milk is handled early in the morning and late in the evening; in winter it goes in to suit the shippers. Milk stands have been erected at each road crossing or where it is possible to procure a shipment of milk.

The Akron, Bedford and Cleveland Electric Railroad handles milk along its line between Akron and Cleveland, the maximum distance from which shipments are made being 35 miles.

Platforms are erected along the line near the various farmhouses, and milk collections are made principally in the early morning.

Baggage cars are used for transportation purposes, and they are kept clean by washing and scrubbing with water.

Freight charges are as follows: Two cents for 1-gallon can, 8 cents for 5-gallon can, 10 cents for 7-gallon can, and 15 cents for 10-gallon can.

The Cleveland, Painesville and Eastern Electric Railroad collects milk from Painesville, Heisley, Mentor, and Willoughby, Ohio, and from different stops between these stations. The distance from Painesville to Cleveland is 30 miles; Heisley, 26 miles; Mentor, 24 miles, and Willoughby, 20 miles.

Milk cars are run from Painesville to Cleveland in 1 hour and 52 minutes. Combination passenger and baggage cars are used, which are cleaned out every night and thoroughly disinfected at least once a week. The freight rates in effect are 1½ cents a gallon from all points.

The Cleveland, Elyria and Western Railway makes milk collections for distribution in Cleveland from points between the towns of Elyria, Oberlin, Wellington, Berea, and Medina. The shippers erect their own milk stands along the line, and what is called the "milk car" stops at these stands and picks up the milk. The distance from Cleveland city limits, where all milk is unloaded, to Elyria is 21 miles; to Oberlin, 30 miles, and to Wellington, 39 miles. The distance from Cleveland city limits to Berea is 10 miles and to Medina 26 miles.

A "milk car" leaves Wellington at 5 a. m. and one at 5 p. m. It takes 2½ hours to run to Cleveland city limits. Cars also leave Medina at 6 a. m. and at 6 p. m., making the run to Cleveland in 2 hours.

The cars used for transporting the milk are combination passenger and baggage cars which have been transformed into freight cars by putting heavy planks on the floors and by strengthening them in different ways. These cars are overhauled daily, swept, cleaned, the floor washed, and a little disinfectant used.

Milk is carried at the rate of 1 cent per gallon from Berea and from Elyria to city limits. From all other points 1½ cents per gallon is asked.

TRANSPORTATION OF MILK TO BUFFALO.

It is estimated that the average daily milk supply of Buffalo, N. Y., in 1900 was, approximately, 124,000 quarts. With a population of 352,387 in 1900, this would indicate an average daily supply per capita for that year of a little over seven-tenths of a pint.

The towns and counties of western New York furnish the great bulk of this supply, the railroads probably bringing in 85 per cent, wagons from suburban territory 10 per cent, and herds within the city limits 5 per cent. Milk is handled by passenger-car service and is generally carried in baggage cars.

The same rate is charged by all railroads for transporting milk to

Buffalo—i. e., 15 cents for a 40-gallon can. This includes shipments nearly 80 miles distant from the city. Cream rates, however, vary, one road charging 5 cents, another 10 cents, and still another 15 cents more for a 40-quart shipment of cream than for carrying the same amount of milk. The retail price of milk at Buffalo is 6 and 7 cents a quart.

BUFFALO, ROCHESTER AND PITTSBURG RAILWAY.

The Buffalo, Rochester and Pittsburg Railway charges the rates found in Table 40 for transporting milk from stations along its line to Buffalo. A rate of 1½ cents on milk and 3 cents on cream per gallon applies from all distances.

Collections are made in Erie County, N. Y., between Orchard Park and Springville, inclusive, and the milk is carried on a daily accommodation train leaving Springville at 7.10 a. m. and arriving in Buffalo at 8.30 a. m. Ordinary baggage cars are used for transportation purposes. These are scrubbed thoroughly at the end of each trip.

TABLE 40.—*Transportation rates on milk and cream from stations in New York to Buffalo.*

[Buffalo, Rochester and Pittsburg Railway.]

Stations.	Miles to Buffalo.	Milk.		Cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Orchard Park	12	7½	15	15	30
Jewettville	17				
West Falls	18				
Colden	23				
Glenwood	25				
East Concord	30				
Springville	33				

PENNSYLVANIA RAILROAD.

The rates found in Table 41 are charged by the Pennsylvania Railroad for transporting milk and cream from stations along its line to Buffalo.

Stations on the Buffalo division only are given, the rate from stations on the Chautauqua division to Prospect, 59 miles from Buffalo, being the same. The rate on cream is double that on milk. Milk is carried in baggage cars attached to local passenger trains.

Cars handling milk are cleaned every day, have a thorough cleaning once a week in winter, and twice a week in summer.

TABLE 41.—*Transportation rates on milk and cream from stations in New York to Buffalo.*

[Pennsylvania Railroad.]

Stations.	Miles to Buffalo.	Milk.		Cream.	
		20-quart cans (cents pre can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Elma	13				
Jamison Road	15				
East Aurora	17				
South Wales	22				
Holland	27				
Protection	30	7½	15	15	30
Chaffee	33				
Arcade	36				
Franklinville	50				
Hinsdale	63				

ERIE RAILROAD.

The rates found in Table 42 are those charged by the Erie Railroad for transporting milk and cream from stations along its line to Buffalo.

A few stations are inserted to show from about what distances these rates apply, and it will be seen at a glance that the rate is the same for all distances. In the 8-gallon cans the rate per can on cream is 4 cents more than that on milk; in the 10 and 12-gallon cans the rate is 5 cents more per can. Milk is carried in baggage or express cars attached to first-class trains. These cars are kept clean by scrubbing.

TABLE 42.—*Transportation rates on milk and cream from stations in New York to Buffalo.*

[Erie Railroad.]

Station.	Miles to Buffalo.	Milk.			Cream.			Bottled milk, maximum 12 quarts (cents per case).	Bottled cream, maximum 12 quarts (cents per case).
		8-gallon cans (cents per can).	10-gallon cans (cents per can).	12-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).	12-gallon cans (cents per can).		
East Buffalo	3								
Checktowago	8								
Lancaster	11								
Town Line	15								
Marilla	17								
Alden	19								
Darien	25								
Attica	31								
Dale	42								
Warsaw	48	12	15	18	16	20	24	8	10
Rock Glen	53								
Silver Springs	55								
Castile	57								
Portage	61								
Hunts	65								
Dalton	67								
Swains	74								
Canaseraga	79								

DELAWARE, LACKAWANNA AND WESTERN RAILROAD.

The rates found in Table 43 are asked by the Delaware, Lackawanna and Western Railroad for transporting milk from stations along its line to Buffalo.

Collections are made in the counties of Erie, Genesee, and Livingston as far east as Mount Morris, a distance of 62 miles, and a train which carries milk leaves Mount Morris daily at 6.56 a. m. and arrives at Buffalo at 9.30 a. m. Refrigerator cars (not iced) are used for transportation purposes, and are cleaned by scrubbing as often as it is found necessary.

Milk in cans is charged for at the rate of 1½ cents per gallon, cream at the rate of 2½ cents per gallon. The same rates apply for all distances.

TABLE 43.—*Transportation rates on milk and cream from stations in New York to Buffalo.*

[Delaware, Lackawanna and Western Railroad.]

Stations.	Miles to Buffalo.	Milk, 10-gallon cans (cents per can).	Cream, 10-gallon cans (cents per can).	Milk in bottles (cents per 12-quart box).
East Lancaster	14			
Looneyville	17			
West Alden	19			
Alden	21			
Fargo	24			
Webers Crossing	26			
Darien	28			
Holmes Crossing	30	15	25	8
Ray	31			
Alexander	34			
East Alexander	36			
Craigs	52			
Greigsville	55			
Leicester	59			
Pennsylvania Railroad Junction	61			

NEW YORK CENTRAL AND HUDSON RIVER RAILROAD.

The rates charged by the New York Central and Hudson River Railroad for transporting milk and cream from stations on its various divisions to Buffalo are found in Table 44. The same rate applies from all distances, but cream rates on 20 and 40-quart cans are 2½ and 5 cents higher, respectively, than on milk.

Collections are made from a maximum distance of 75 miles, the bulk of the milk, however, being shipped from stations within 30 miles of Buffalo. Milk is forwarded in regular baggage cars attached to passenger trains, the cars being cleaned at the end of each trip.

TABLE 44.—*Transportation rates on milk and cream from stations in New York to Buffalo.*

[New York Central and Hudson River Railroad.]

Stations.	Miles to Buffalo.	Milk.		Cream.	
		20-quart cans (cents per can).	40-quart cans (cents per can).	20-quart cans (cents per can).	40-quart cans (cents per can).
Black Rock	4				
Clarence Center	13				
East Clarence	15				
Looneyville	16				
Wende	17				
Akron	20				
Crittenden	20				
Pembroke	23	7½	15	10	20
Town Line	23				
Corfu	25				
West Batavia	30				
Ellenwood	33				
Batavia	36				
Indian Road	38				
Knowlesville	45				

SHIPMENTS OF MILK TO SAN FRANCISCO.

It is estimated that the milk supply of San Francisco, Cal., in 1900 amounted to about 27,000 gallons a day, allowing an average daily supply per capita of somewhat over three-fifths of a pint. Milk is reported to have cheapened in price about 20 per cent during the last ten years, and at the present time retails at from 5 to 7 cents per quart.

This supply comes from San Francisco County and adjoining river and bay counties, about 45 per cent being brought in by wagons from suburban territory and 55 per cent by the railroads and river boats. The railroad milk has to be transported across the bay on passenger boats; but as these boats are owned by the railroad companies, no extra charge is made, and therefore the rates quoted in the following tables cover ferriage.

ATCHISON, TOPEKA AND SANTA FE RAILWAY.

The Atchison, Topeka and Santa Fe Railway charges the rates found in Table 45 for transporting milk and cream from stations along its line to San Francisco. Milk is handled in baggage cars attached to regular passenger trains.

TABLE 45.—*Transportation rates on milk and cream from stations in California to San Francisco.*

[Atchison, Topeka and Santa Fe Railway.]

Stations.	Miles to San Francisco.	3-gallon cans (cents per can).	5-gallon cans (cents per can).	10-gallon cans (cents per can).
Point Richmond	8			
East Yard	10	3	5	10
San Pablo	12			
Gateley	16			
Pinole	18	3¼	5¼	10
Dupont	19			
Luzon	20			
Fernandez	24	3½	5½	10
Portal	26			
Muir	29	3¾	5¾	10½
Vine Hill	31	4	5¾	10½
Maltby	32	4	6	12
Bay Point	36			
Ambrose	40	5	7	12
Diamond	44	6	8	13
Antioch	47			
Oakley	54	6	8	14
Knightsen	57	7	9	15
Bixler	60	8	10	16
Old River	63			
Middle River	65	9	11	17
Hurd	66	10	12	18
Holt	70	11	13	19
Gillis	72	12	14	19
San Joaquin River	75			
Stockton	78	13	15	20
Burnham	87			
Avena	93			
Escalon	98	14	16	21
Harrold	100			
Huntley	101	15	17	22
Riverbank	103	16	18	23
Clauston	107	17	19	24
Empire	110			
Hughson	114			
Elmdale	120			
Ballico	127			
Cressy	130	18	20	25
Batata	135			
Cuba	137			
Merced	143			

SOUTHERN PACIFIC COMPANY.

The rates found in Table 46 are those charged by the Southern Pacific Company for transporting milk from stations along its line to San Francisco. The rate of 10 cents per 100 pounds from San Bruno is a special rate made to meet team competition. This railroad is also forced to meet water competition at several of its shipping points, and this fact largely accounts for the irregularity in milk rates herewith presented. Milk is collected from a distance of 67 miles.

No special milk trains are operated, the milk being handled in baggage or express cars attached to regular passenger trains. The cars are cleaned with hose and scrubbing brush and disinfected with formaldehyde. At the larger shipping points special platforms have been constructed, the floors of which are on the same level as the baggage cars, thus enabling quick loading of milk cans, which may vary in size from 3 to 10 gallons. The milk for San Francisco is transferred from the cars to hand trucks and brought across the bay on a passenger

steamer belonging to this railroad. At the ferry at San Francisco the milk is loaded into the wagons of the various firms which handle it.

TABLE 46.—*Transportation rates on milk from stations in California to San Francisco.*

[Southern Pacific Company.]

Stations.	Miles to San Francisco.	Cents per 100 pounds.
San Bruno	15	10
Millbrae	17	
San Mateo	22	
Beresford	24	
Belmont	26	
San Carlos	27	
Redwood	29	10½
Menlo Park	33	
Mayfield	35	
Mountain View	40	
Lawrence	44	
Sunol	37	21
Goodyear	39	19½
Milpitas	42	10½
Buchli	67	19½

CALIFORNIA TRANSPORTATION COMPANY.

The California Transportation Company carries milk by steamer from Bouldin and Twitchell islands to San Francisco, a distance of about 80 miles. The average daily shipments amount to about 1,000 gallons and the freight charges are 2 cents per gallon.

Steamers leave Bouldin and Twitchell islands about 7 p. m. and arrive in San Francisco at 5 a. m. the next morning. The milk, which is shipped in 10-gallon cans securely covered with a tight lid, is always cooled by an ammonia process before loading on vessels.

MILK TRANSPORTATION TO CINCINNATI.

The average daily milk supply of Cincinnati, Ohio, in 1900, was about 25,000 gallons, making an average daily per capita supply of slightly over three-fifths of a pint. The wholesale price of milk at the present time is 20 cents a gallon. Retailers receive 6 cents per quart, which is reported to be a decrease in price during the past ten years. There is some little milk sold at 8 cents per quart. Wagons from urban and suburban territory furnish 75 per cent of this supply, the railroads bringing in the balance.

Milk collections are made by the railroads from comparatively near-by territory in the States of Ohio, Indiana, and Kentucky, few shipments being made from points over 30 miles distant. Baggage cars are generally used for transportation purposes.

From such railroads as have submitted reports, it appears that rates on milk shipped to Cincinnati are about uniform, being 15 cents for a 40-quart can. Cream rates, however, differ, being in one instance the same as the rate on milk, and in another 5 cents higher on a 40-quart can.

CINCINNATI, NEW ORLEANS AND TEXAS PACIFIC RAILWAY.

The Cincinnati, New Orleans and Texas Pacific Railway charges the rates found in Table 47 for transporting milk and cream from stations along its line to Cincinnati. The stations named are those from which shipments were being made in 1901. The rates named, however, cover a distance of 181 miles from Cincinnati.

Baggage cars attached to local passenger trains are used for transportation purposes, and these cars are cleaned at terminals and from time to time by the train baggage men. The rates on cream when the cans are packed in ice are 30 cents for a 5-gallon can and 45 cents for a 10-gallon can.

TABLE 47.—*Transportation rates on milk and cream from stations in Kentucky to Cincinnati, Ohio.*

[Cincinnati, New Orleans and Texas Pacific Railway.]

Stations.	Miles to Cincinnati.	Milk.		Cream.	
		5-gallon cans (cents per can).	10-gallon cans (cents per can).	5-gallon cans (cents per can).	10-gallon cans (cents per can).
Erlanger	7	10	15	12	20
Buffington	9				
Dixon	11				
Crittenden	25				

CLEVELAND, CINCINNATI, CHICAGO AND ST. LOUIS RAILWAY.

The rates found in Table 48 are charged by the Cleveland, Cincinnati, Chicago and St. Louis Railway for transporting milk and cream from stations along the line of its railroad to Cincinnati. Cream is generally carried at the same rate as milk unless packed in ice, when three times the milk rate is asked. All shipments are made in baggage cars attached to regular passenger trains.

TABLE 48.—*Transportation rates on milk and cream from stations in Ohio and Indiana to Cincinnati, Ohio.*

[Cleveland, Cincinnati, Chicago and St. Louis Railway.]

Stations.	Miles to Cincinnati.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Chicago division:			
Cleves, Ohio	16	12	15
Valley Junction, Ohio	18		
Elizabethtown, Ohio	20		
Lawrenceburg Junction, Ind	23		
Lawrenceburg, Ind	25		
Cincinnati division:			
Sharon, Ohio	17		
Mauds, Ohio	22		
Hughes, Ohio	25		
Kyles, Ohio	27		

FREIGHT RATES ON MILK TO PITTSBURG.

The milk supply of Pittsburg, Pa., for the year 1900 was reported to have been approximately 11,000,000 gallons. This places the average daily supply per capita in 1900 at a little less than four-fifths of a pint. About 90 per cent of this supply is brought in by the railroads and 10 per cent by wagons from city and suburban territory. Milk retails at from 6 to 10 cents a quart.

The chief localities from which the railroad milk is procured lie in Allegheny, Westmoreland, Washington, and Butler counties, Pa., and in eastern Ohio.

LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY.

The bulk of the milk shipped over the Pittsburg and Lake Erie Railroad to Pittsburg originates on the Youngstown branch of the Lake Shore and Michigan Southern Railway, starting at Leon and including the territory as far south as Fowler. The rate from these points is 3 cents per gallon, and the distance is covered from Leon station to Pittsburg in about 3 hours.

Milk is also shipped from local stations on the Pittsburg and Lake Erie Railroad, but in much smaller quantities. The average rate from these local points is probably about 2 cents per gallon. Baggage cars attached to local passenger trains are used for transportation purposes. Other railroads transporting milk to Pittsburg have not sent in reports.

TRANSPORTATION OF MILK TO NEW ORLEANS.

The average daily milk supply of New Orleans, La., in 1900 amounted to about 9,875 gallons, which allowed an average daily consumption per capita of nearly three-tenths of a pint. This supply was procured from herds within the city limits and from dairies along the line of the Illinois Central Railroad. In 1901 the city dairy herds numbered 440 and contained 6,686 cows, producing about 86 per cent of the milk supply.

The territory covered by the railroads in making collections extends 83 miles north in Louisiana and embraces 69 dairies.

The retail price of milk in New Orleans varies from 7½ to 10 cents per quart.

ILLINOIS CENTRAL RAILROAD.

The rates found in Table 49 are charged by the Illinois Central Railroad for transporting milk and cream from stations along its line to New Orleans.

Although rates are given as far as McComb City, Miss., a distance of 105 miles, no milk is shipped from territory north of Kentwood, a

distance of 83 miles. Cream is carried for the same rate as milk. Milk is collected on a train which leaves Kentwood at 6.21 a. m. and arrives in New Orleans at 9.25 a. m. Baggage cars attached to passenger trains are used for transportation purposes.

TABLE 49.—*Transportation rates on milk from stations in Louisiana and Mississippi to New Orleans, La.*

[Illinois Central Railroad.]

Stations.	Miles to New Orleans.	5-gallon cans (cents per can).	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Shrewsbury, La	6			
Sauve, La				
Harahan, La	8	11.8	15.0	19.0
Kenner, La	10			
Fallon, La	14			
La Branch, La	19			
Frenier, La	24	11.8	15.3	19.3
De Sair, La	30	11.8	15.4	19.4
Ruddocks, La	31	12.8	15.5	19.5
Oteri, La	33			
Manchac, La	38	13.8	15.9	19.9
Alligator, La	43			
Ponchatoula, La	48	13.8	16.0	20.0
Hammond, La	53			
Tiefaw, La	58			
Independence, La	62	13.8	17.5	21.5
Gullets, La	68	14.7	17.5	21.5
Amite, La	69			
Roseland, La	71	14.7	19.0	23.0
Arcola, La	72			
Newsoms Mills, La	78	15.5	19.0	23.0
Tangipahoa, La	79			
Kents Mills, La	82	15.5	20.0	24.0
Kentwood, La	83			
Roncal, La		16.4	20.0	24.0
Osyka, Miss	89			
Castors Mills, Miss		16.6	22.0	26.0
Chatawa, Miss	92			
Fernwood, Miss	102			
Quinns, Miss		17.4	22.0	26.0
McComb City, Miss	105			

MILK SHIPMENTS TO DETROIT.

Detroit, Mich., had a daily milk supply of about 25,000 gallons in 1900, which indicated an average supply per capita per day of seven-tenths of a pint. This supply was derived principally from territory within 20 miles of the city, although occasional rail shipments were made from points almost 100 miles distant. City herds and wagons from suburban territory supply about 50 per cent of the milk required, while the steam and electric railroads bring in the balance.

The electric railroads are an important factor in connection with the transportation of Detroit's milk supply. One steam railroad official asserts that the electric lines running into Detroit carry more milk than the steam railroads. This assertion, however, does not seem to be established by figures received by this Department. Nevertheless, it is apparent that the electric lines are rapidly increasing in importance as milk carriers, and that at the present time they are carrying a large share of what might be termed "railroad milk," or milk too far away from the city to be brought in by wagons.

The steam lines employ baggage or express cars for transportation purposes, and the electric roads employ what they term a "special milk car," which is an equivalent to a baggage car on a steam railroad. Rates on the steam roads vary from 10 to 30 cents per 40-quart can, according to the distance and the railroad, while rates on the electric lines are quoted as from 8 to 10 cents. It must be understood, however, that the steam lines transport some milk from points located much farther from the city than any reached by their electric competitors.

The retail price of milk at Detroit ranges from 5 to 8 cents a quart and these prices have remained about the same for many years.

MICHIGAN CENTRAL RAILROAD.

The rates found in Table 50 are those asked by the Michigan Central Railroad for carrying milk to Detroit. Most of the milk is collected from within a distance of 30 miles, but a few shipments are made from points as far distant as 54 miles. Baggage cars attached to local passenger trains are used for transportation purposes.

TABLE 50.—*Transportation rates on milk from stations in Michigan to Detroit.*

[Michigan Central Railroad.]

Stations.	Miles to Detroit.	40-quart cans (cents per can).
Dearborn	10	
Inkster	13	
Utica	24	
Ypsilanti	29	10
Rochester	31	
Goodison	35	
Ann Arbor	37	
Chelsea	54	15

GRAND TRUNK RAILWAY.

The Grand Trunk Railway asks the rates found in Table 51 for transporting milk from stations along its lines to Detroit. The bulk of the milk comes from a distance within 50 miles of Detroit, although occasional shipments have been made from as far distant as 97 miles. Milk is handled in baggage cars attached to local passenger trains. These cars are cleaned from time to time as required.

TABLE 51.—*Transportation rates on milk from stations in Michigan to Detroit.*

[Grand Trunk Railway.]

Stations.	Miles to Detroit.	8-gallon cans (cents per can).	10-gallon cans (cents per can).
Fraser	17	12	15
Birmingham	18		
Mount Clemens	22		
Chesterfield	26		
Walled Lake	38	15	20
Wixon	40		
Armada	45		
Smiths Creek	49		
Jackson	96	25	30

WABASH RAILROAD.

The rates found in Table 52 are those charged by the Wabash Railroad for transporting milk and cream to Detroit. Shipments are made as far distant as Milan, Mich. The train leaves Milan daily at 6.28 a. m. and arrives at 8 a. m., covering a distance of 37 miles in one hour and thirty-two minutes. A second train leaves Milan at 6.32 p. m. and arrives at Detroit at 7.50 p. m. The cars employed are the regular combination baggage and express car, and are thoroughly swept out and cleaned on arrival at Detroit and also before going out on another trip.

TABLE 52.—*Transportation rates on milk and cream from stations in Michigan to Detroit.*

[Wabash Railroad.]

Stations.	Miles to Detroit.	Milk, 40-quart cans (cents per can).	Cream, 40-quart cans (cents per can).
Hand	12	10	20
Romulus	19		
Belleville	24		
Whittaker	32	11	22
Milan	37	12½	25

TRANSPORTATION OF MILK TO MILWAUKEE.

It is estimated that the milk supply of Milwaukee, Wis., amounted in 1900 to approximately 24,650 gallons daily, indicating an average daily supply per capita of considerably over three-fifths of a pint.

This milk is supplied from dairies within the city limits and in the surrounding country within a radius of about 50 miles. Herds within the city limits and wagons from suburban territory supply about 75 per cent of the milk and cream consumed, and the railroads bring in the balance.

Milk is transported in baggage cars or specially constructed milk cars, but no ice is used for cooling purposes, as the haul is short and the milk arrives in good condition without refrigeration.

CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY.

The rates found in Table 53 are those charged by the Chicago, Milwaukee and St. Paul Railway for transporting milk from stations along its line to Milwaukee, Wis. Cream is carried at the same rate as milk.

Milk cars are constructed with two end and two side doors, and have slatted floors with a trough in the center. These cars are washed out two or three times a week, according to the weather, and are always kept in a sanitary condition.

TABLE 53.—*Transportation rates on milk and cream from stations in Wisconsin to Milwaukee.*

[Chicago, Milwaukee and St. Paul Railway.]

Stations.	Miles to Milwaukee.	8-gallon cans (cents per can).	10-gallon cans (cents per can).	12-quart cans (cents per crate).	18-quart cans (cents per crate).
Chicago and Milwaukee Division:					
Oakwood	13	15	19	9	15
Caledonia	16				
Franksville	19				
Corliss	24	15	19	9	15½
Racine and Southwestern Division:					
Burlington	43	18¼	22½	.....	.....
La Crosse Division:					
Brookfield Junction	14	10	12½	9	15
Duplainville	11	12½	16½	9	15½
Pewaukee	20				
Lakeside	21				
Hartland	25	14½	18½	9	15½
Nashotah	27	15½	19½	9	16
Oconomowoc	32				
Richwood	50	16	20	10	17½
Reeseville	55	16	20	10½	18
Prairie du Chien Division:					
Elm Grove	10	10	12½	9	15
Waukesha	20	12½	16½	9	15½
Genesee	28	14½	18½	9	16
North Prairie	31	15½	19½	10	17
Eagle	36	16	20	10½	18
Palmyra	42				
Whitewater	50				
Lima	56				
Milton	62	17½	21½	10½	18
Northern Division:					
Granville	15	10	12½	9	13
Menomonee Falls	19	12	16½	9	13
Lannon	22	12	16½	9	14
Templeton	25	12	16½	9	15½
Sussex	26				
North Lake	34	15½	19½	9	16
Hartford	37	16	20	9	16
Iron Ridge Junction	47				
Mayville	53	17½	21½	9	16½
Superior Division:					
Thiensville	17	10	12½	9	16½
Plymouth	54	17½	21½	10½	18

MILK TRANSPORTATION TO WASHINGTON.

The territory from which the milk supply of Washington is derived lies in the agricultural portions of the District of Columbia and in the neighboring States of Maryland and Virginia. Within the District of Columbia are situated 136 dairy farms producing milk for sale. These farms contain about 1,000 cows, which produce an average of about 2,000 gallons per diem. In Maryland there are about 280 and in Virginia 350 dairy farms regularly sending milk to Washington, containing in all approximately 5,000 cows. The milk from the District farms and the near-by territory in Maryland and Virginia is brought to the city in wagons and is generally distributed by the farmer himself or one of his employees.

The railroad milk arrives in Washington between 8 and 9 o'clock each morning, having been taken from the cows the night before. In the evening trains arriving over the same routes bring in smaller

amounts from the morning milking. The average daily supply, procured from all sources, amounts to about 12,000 gallons, or an average daily supply per capita of somewhat over three-tenths of a pint.

BALTIMORE AND OHIO RAILROAD.

The rates found in Table 54 are those asked by the Baltimore and Ohio Railroad for transporting milk and cream from stations along its line to Washington. Shipments are made from points as far distant as 57 miles. Milk is collected early in the morning, reaching Washington between 8.15 and 9.20. Ordinary baggage cars are used for transportation purposes, the floors being supplied with iron slats, allowing the milk cans to be easily slid from the door to any part of the car. The cars are scrubbed out twice a month in winter and from three to four times a month during summer.

TABLE 54.—*Transportation rates on milk and cream from stations in Maryland to Washington, D. C.*

[Baltimore and Ohio Railroad.]

Stations.	Miles to Washington.	5-gallon cans (cents per can).	Stations.	Miles to Washington.	5-gallon cans (cents per can).
Laurel	19	10	Buck Lodge	30	10
Garrett Park	12		Barnesville	33	12½
Halpine	15		Dickerson	36	
Rockville	16		Tuscarora	39	
Derwood	19		Doubs	46	
Washington Grove	20		Buckeystown	49	
Gaithersburg	21		Lime Kiln	51	
Ward	22		Frederick Junction	53	15
Cloppers	24		Frederick	57	
Waring	26		Catoctin	46	12½
Germantown	27		Garrett Mills	51	15
Boyds	29				

SOUTHERN RAILWAY.

The rates found in Table 55 are those asked by the Southern Railway for transporting milk and cream from stations in Virginia to Washington. The same rates are asked for all distances. Woodstock is the farthest point from which milk shipments are made, and the distance from this station to Washington of 105 miles is traversed by the milk trains in four hours and forty minutes.

The cars used are extra heavy, 60-foot baggage cars, lined with yellow pine, and varnished. These cars are thoroughly washed and aired at the end of each run.

TABLE 55.—*Transportation rates on milk from stations in Virginia to Washington, D. C.*

[Southern Railway.]

Stations.	Miles to Washington.	5-gallon cans (cents per can).	10-gallon cans (cents per can).
Dunn Loring	16		
Vienna	19		
Sterling	30		
Ashburn	34		
Leesburg	41		
Round Hill	54		
Burkes	20		
Manassas	33	12½	25
Catlett	44		
Bealeton	53		
Brandy	62		
Mitchell	74		
Rapidan	79		
Somerest	92		
Woodstock	105		

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